LV-736EE/836EE/K881/X731/X821/X831

RMT-V145/V145A/V145B

SERVICE MANUAL

East European Model
SLV-736EE/836EE
Saudi Arabian Model
SLV-X731/X821/X831
E Model

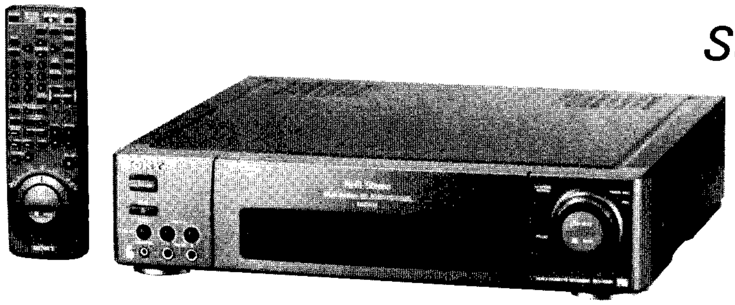


Photo : SLV-K881

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT II for MECHANICAL ADJUSTMENTS. (9-972-816-11)**

VHS Hi-Fi

SPECIFICATIONS

System

Channel coverage
See page 2.

RF output signal
See page 2.

Frequency (MHz)

	SLV-836EE/K881/X831	SLV-736EE/X731/X821
VL	42 - 167	42 – 153
VH	167 - 470	153 – 470
U	470 – 862	470 – 862

Aerial out
75-ohm asymmetrical aerial socket

Inputs and outputs

LINE IN
VIDEO IN, Phono jack (2)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (2)
Input level: -7.5 dBs
(0 dBs = 0.775 Vrms)
Input impedance: more than 47 kilohms

LINE OUT
VIDEO OUT, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (1)
Rated output level: –7.5 dBs
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms

General

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
SLV-K881 29 W
SLV-836EE/X831 28 W
SLV-736EE/X821 25 W
SLV-X731 24 W

Operating temperature
5°C to 40°C (41°F to 104°F)

Storage temperature
–20°C to 60°C (–4°F to 140°F)

Dimensions
Approx. 430 × 100 × 376 mm (w/h/d)
(17 × 4 × 14 7/8 inches)
including projecting parts and controls

Weight
SLV-K881
Approx. 6.1 kg
SLV-836EE/X831
Approx. 5.9 kg
SLV-736EE/X731/X821
Approx. 5.7 kg

Supplied accessories

Remote commander (1)
SLV-K881: RMT-V145
SLV-736EE/836EE/X821/X831:
RMT-V145A
SLV-X731: RMT-V145B
R6 (size AA) batteries (2)
Aerial cable (1)
AV cable (1) (Except SLV-X731)
Mains lead (1)
Mains lead plug adaptor (1)
(Except SLV-736EE/836EE)
Microphone (1) (SLV-K881)

Design and specifications are subject to change without notice.

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

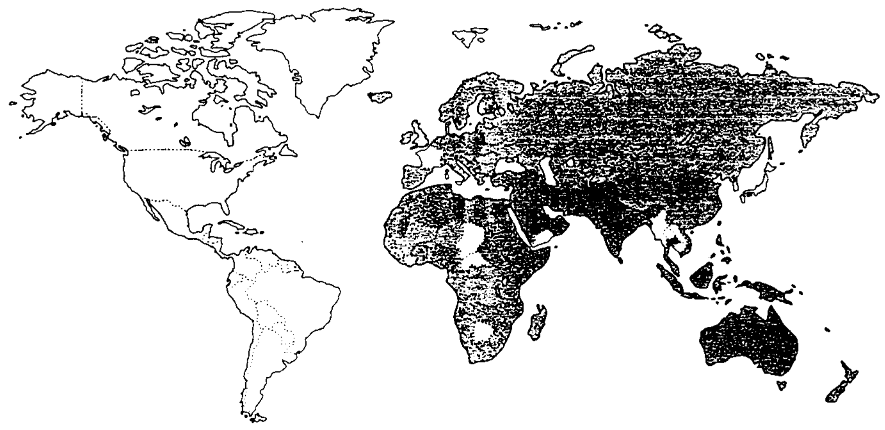
– Continued on next page –

VIDEO CASSETTE RECORDER

SONY®

MICROFILM

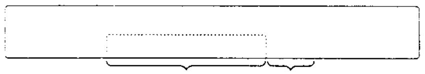
Step 4 Channel setup map and chart



About colour systems

Different countries use different colour systems, which determine various parameters for video playback and recording, among others. Using your VTR in a country that has standardized on a colour system not supported by the VTR may cause problems such as playback without sound, a vertically rolling picture, etc.

Refer to the map above to determine which countries use which colour systems. The SLV-736EE/836EE/K881/X821/X831 are compatible with all existing colour systems, except for the one used in France. The SLV-X731 is compatible with all existing colour systems. If you have made the TV-VTR connections using the aerial sockets, refer to the operating instructions for your TV to correctly set the switches on the rear of the VTR (as described on the following page). This unit displays the colour system and TV system in the VTR display window.



Note
If you have set your VTR to line input without receiving an input signal (or if you haven't made the connections yet), a demonstration is cycled in the display window instead of the current colour system setting.

Channel setup chart

Map pattern	Colour system, TV system	Area	Channels* VL	VH	U	RF channel output Preset	Adjustable	TV SYSTEM K/I/G switch	TV SYSTEM AUTO/M switch***
■	PAL B/G	Western Europe	2 – 4 S01 – S03** S1 – S9** [S1 – S7]	5 – 12 S10 – S41** [S8 – S41]	21 – 69	32 32 32	30 – 39 30 – 39 30 – 39	G	N/A (no effect)
		Turkey Kuwait U.A.E. Oman, Jordan	2 – 4	5 – 12	21 – 69	32	30 – 39		
		Australia	0 – 5, 5A	6 – 11	28 – 69	32	30 – 39		
		Indonesia	1A, 2, 3	4 – 11	—	32	30 – 39		
■	PAL I	U.K. Hong Kong	—	—	21 – 68	32	30 – 39	I	N/A (no effect)
		Ireland	A – C,	D – J	—	32	30 – 39		
		South Africa	—	4 – 11, 13	21 – 68	32	30 – 39		
■	PAL D/K	China	1 – 5	6 – 12	13 – 57	24	22 – 31	K	N/A (no effect)
■	SECAM B/G	Saudi Arabia Iran Iraq Libya Egypt Morocco Greece Syria	2 – 4	5 – 12	21 – 69	32	30 – 39	G	N/A (no effect)
■	SECAM D/K	East Europe Russia	1 – 5	6 – 12	21 – 60	32	30 – 39	K	N/A (no effect)
	SECAM K1	Zaire Senegal Niger New Caledonia Tahiti The Guyana	—	K4 – K9	—	32	30 – 39	K	N/A (no effect)
□	NTSC 3.58	USA	2 – 6 95 – 99** 14 – 22** [14 – 18]	7 – 13 23 – 65** [19 – 65]	14 – 69 66 – 94**	28 – 29	26 – 38	N/A (no effect)	ON (M output) or
		Japan	1 – 3 C13 – 22** [C13 – 19]	4 – 12 C23 – 63** [C20 – 63]	13 – 62	27 – 28	25 – 37		OFF (K/I/G output)

* VL = VHF low band, VH = VHF high band, U = UHF band

** CATV channels (SLV-836EE/K881/X831), [...] (SLV-736EE/X731/X821)

*** Generally, set the TV SYSTEM AUTO/M switch to ON.

Although the adjustable RF channel output for China, USA, and Japan differ from that of other regions, the procedure for obtaining a clear picture is the same. Turn the RF channel screw with a screwdriver until you obtain a clear picture. (See page **11**.)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SERVICE NOTE

1. RETURNING PINCH ROLLER, GUIDE ROLLER AND ELEVATOR CAM TO STOP CONDITION

1) Remove the bottom panel.
2) Turn the worm gear Ⓐ of the cam motor, located at lower of the MD, to the arrow direction Ⓑ by finger.

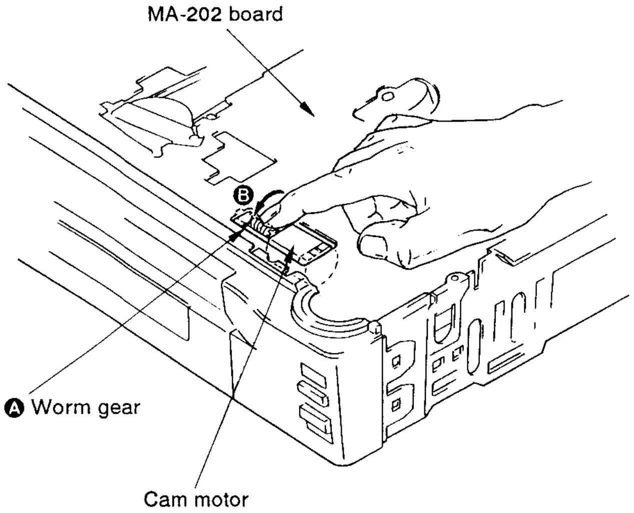

MA-202 board
Ⓑ
Ⓐ Worm gear
Cam motor

Fig. 1.

2. WINDING TAPE TO CASSETTE HALF

Turn the flywheel Ⓐ of the capstan motor to the arrow direction Ⓑ by finger, then the cassette tape will be wound to the cassette half.

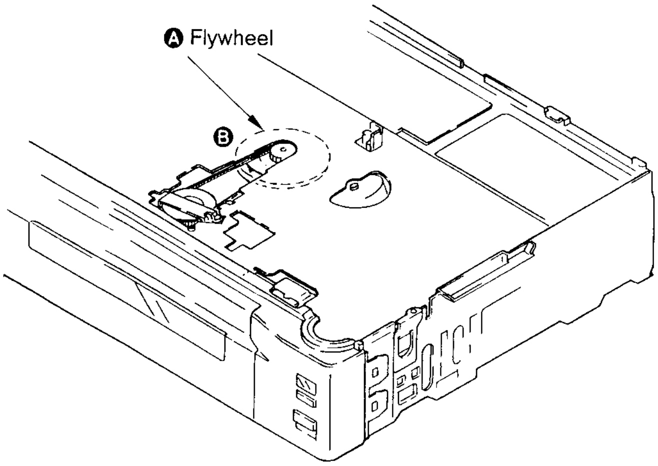


Fig. 2.

3. TAKING OUT CASSETTE WHEN UNIT IS DEFECTIVE WITH CASSETTE IN

1) Remove the upper case.
2) Turn the worm gear Ⓐ of the FL cassette compartment motor to the arrow direction Ⓑ by finger.

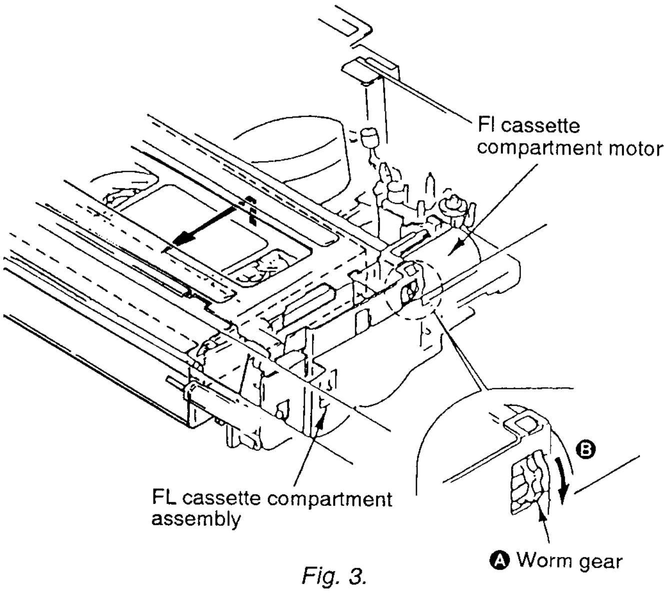

Fl cassette compartment motor
FL cassette compartment assembly
Ⓑ
Ⓐ Worm gear

Fig. 3.

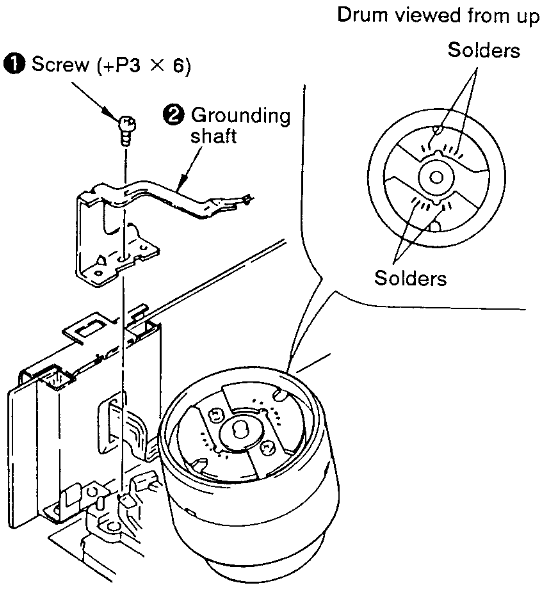
Note: When performing 1. to 3., be careful not to clog and damage the cassette tape.

4. UPPER DRUM REPLACEMENT

4-1. Removal of Upper Drum

1) Remove the screw ❶ (+P3 × 6) and take out the grounding shaft ❷. (See Fig. 4.)
2) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows.
3) Remove two screw ❸ (PSW3 × 8) and take out the rotary upper drum in the arrow direction Ⓐ. (See Fig. 5.)
   If it difficult, remove by shaking the rotary upper drum gradually.

Note: If the drum can not be removed, check wheater the solders have been removed or not again.

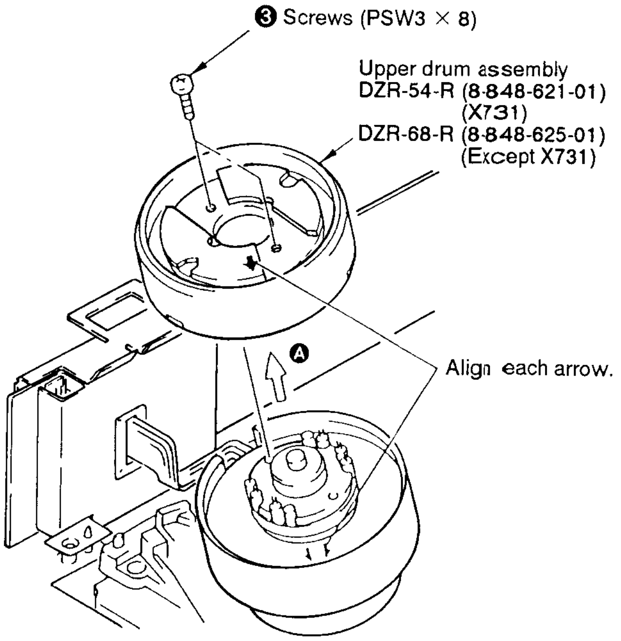


Drum viewed from up
Solders
❶ Screw (+P3 × 6)
❷ Grounding shaft
Solders

Fig. 4.

4-2. Mounting Upper Drum

1) When inserting the rotary drum into the lower drum, be careful not to blur the contacting surface with fingerprint or the like.
2) Mount the rotaly upper drum board by aligning marked ➡ with marked ⇒ of rotary transformer board (lower drum) so that the screw holes of both upper and lower drums match. (See Fig. 5.)
3) If it is difficult, mount the upper drum by shaking it gradually.
   Note: Be careful not to damage the head. Make sure that the upper drum is tightly inserted.
4) Tighten two screws ❸ (PSW3 × 8). (See Fig. 5.)
   Note: Temporary tighten two screws. After making sure that upper drum is tightly inserted, tighten the screws.
5) Solder points on the board of the rotary upper drum.
6) Fix the grounding shaft ❷ using the screw ❶ (+P3 × 6) so that the protrusin of grounding shaft end contacts the center of the drum shaft.
   Note: When attaching the grounding shaft ❷, be careful not to apply force to the spring section of it.



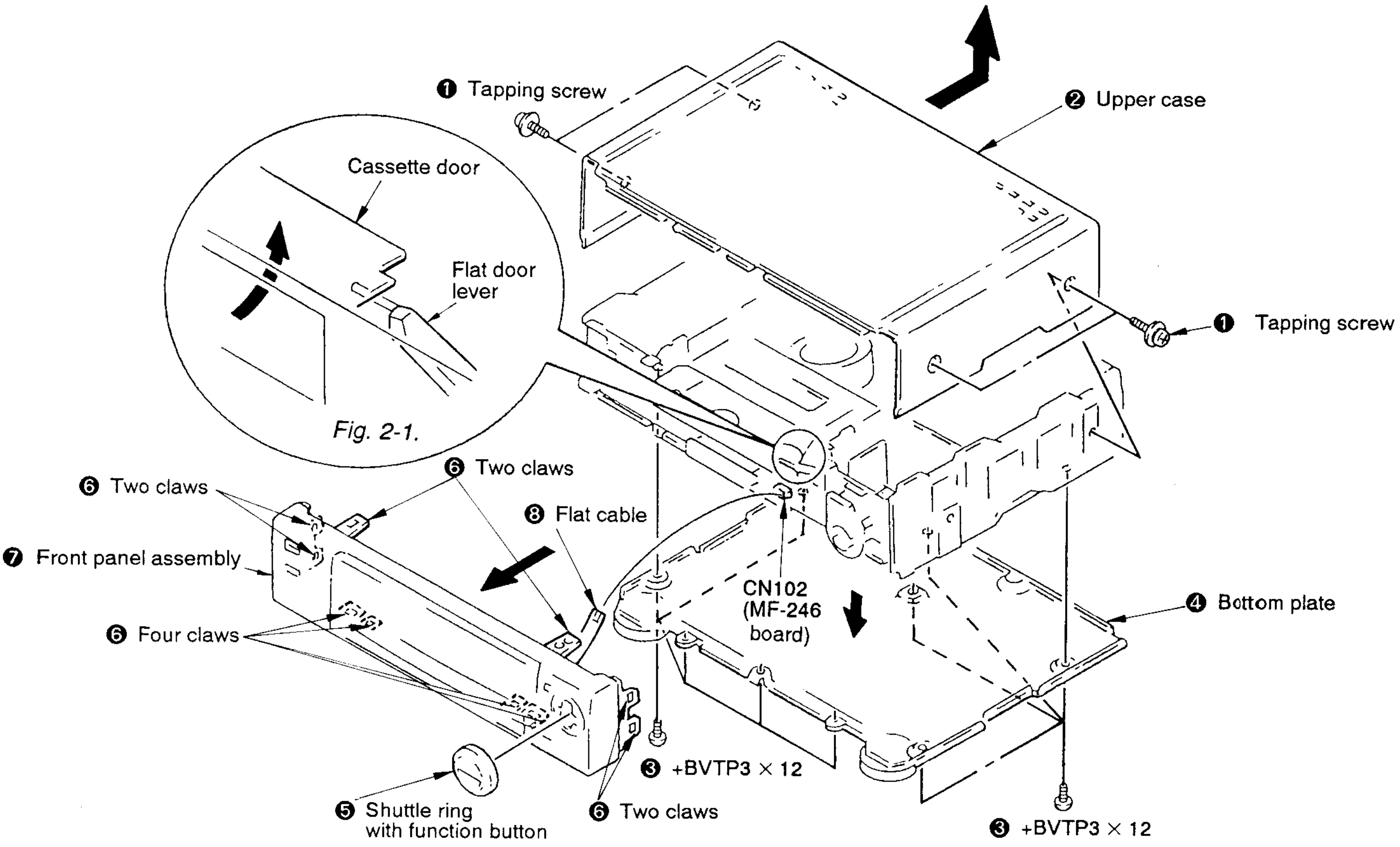
❸ Screws (PSW3 × 8)
Upper drum assembly
DZR-54-R (8-848-621-01)
(X731)
DZR-68-R (8-848-625-01)
(Except X731)
Ⓐ
Align each arrow.

Fig. 5.

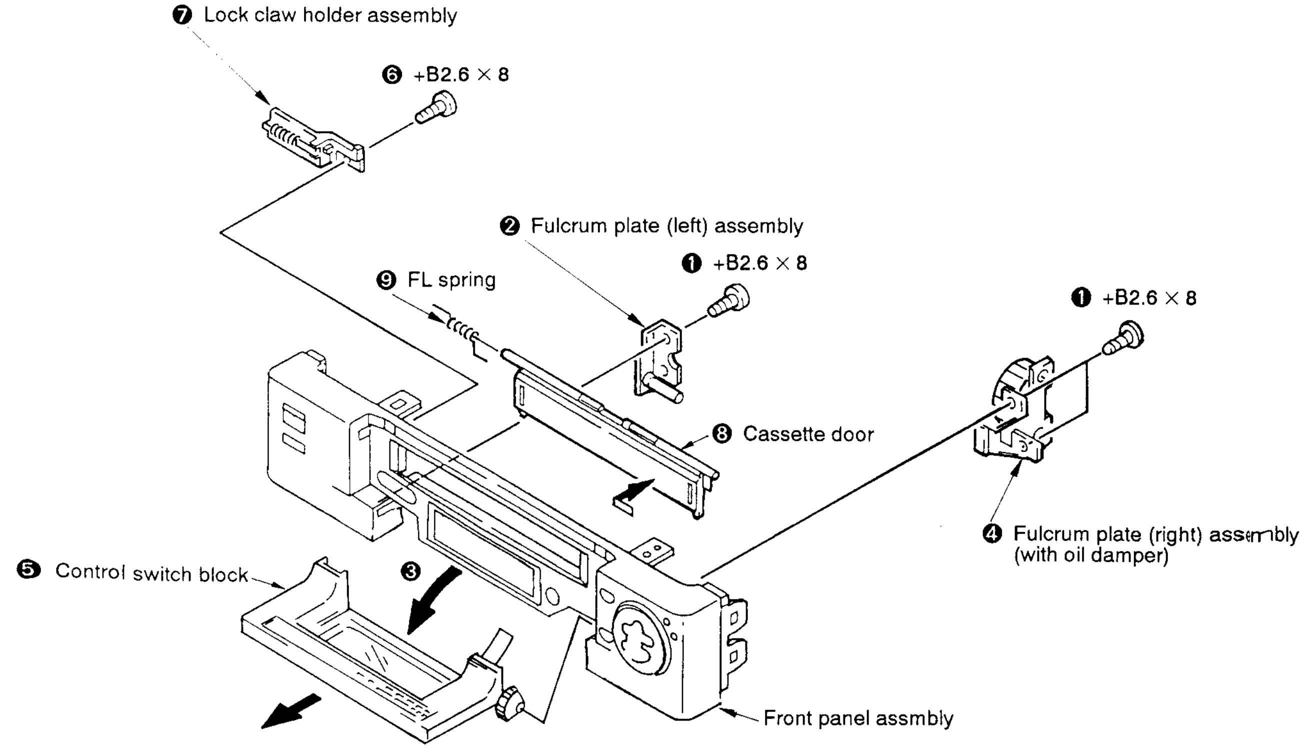
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

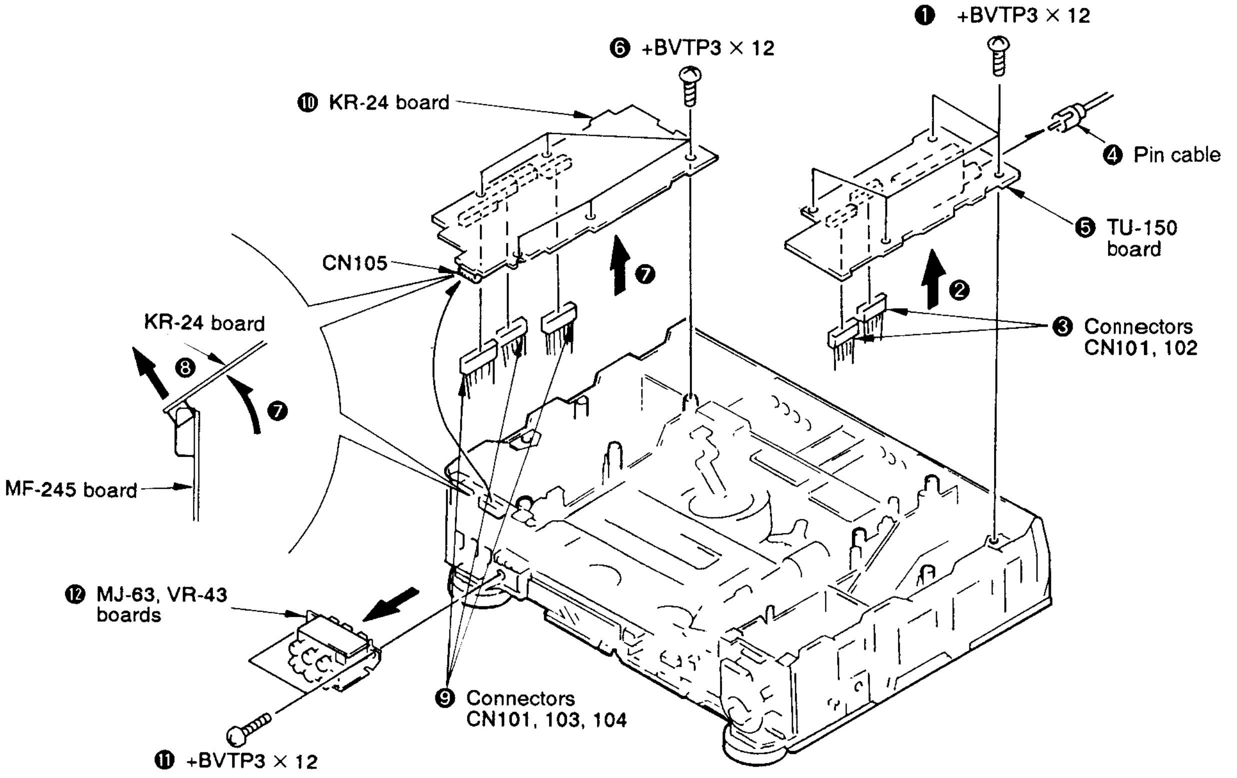
2-1. FRONT PANEL ASSEMBLY AND CASE


❶ Tapping screw
Cassette door
Flat door lever
Fig. 2-1.
❷ Upper case
❶ Tapping screw
❻ Two claws
❻ Two claws
❽ Flat cable
❼ Front panel assembly
❻ Four claws
CN102 (MF-246 board)
❹ Bottom plate
❸ +BVTP3 × 12
❺ Shuttle ring with function button
❻ Two claws
❸ +BVTP3 × 12

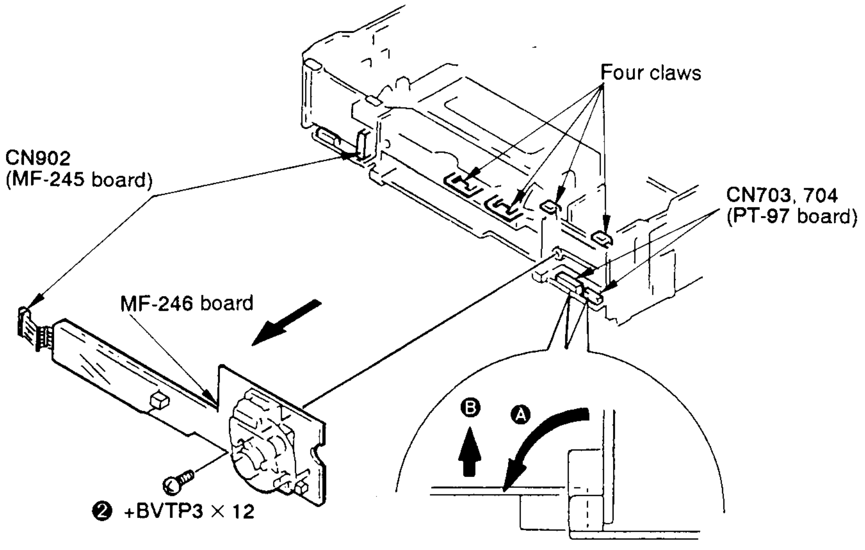
2-2. CONTROL SWITCH BLOCK, CASSETTE DOOR


❼ Lock claw holder assembly
❻ +B2.6 × 8
❷ Fulcrum plate (left) assembly
❶ +B2.6 × 8
❾ FL spring
❶ +B2.6 × 8
❽ Cassette door
❹ Fulcrum plate (right) assembly (with oil damper)
❺ Control switch block
❸
Front panel assmbly

2-3. TU-150 BOARD (SLV-836EE/K881/X831), KR-24, MJ-63, VR-43 BOARDS (SLV-K881)

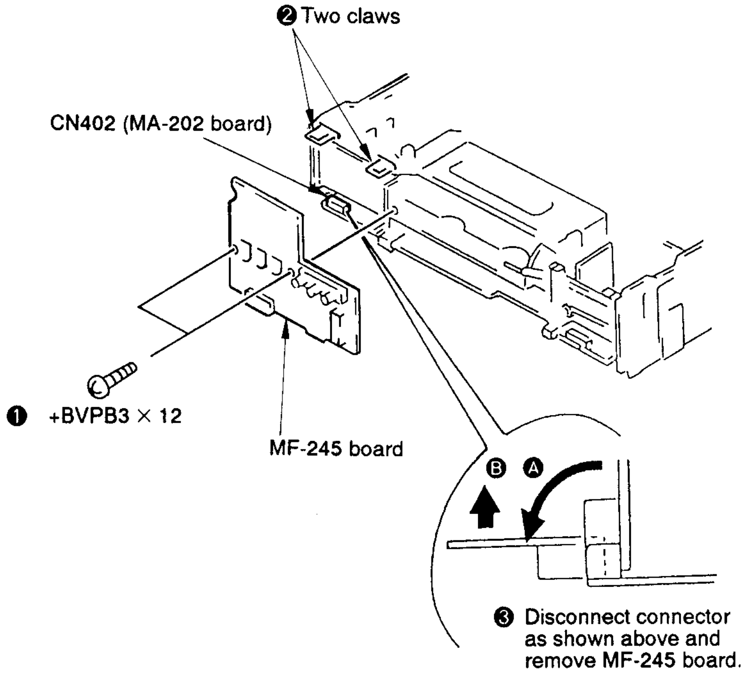

① +BVTP3 × 12
⑥ +BVTP3 × 12
⑩ KR-24 board
④ Pin cable
⑤ TU-150 board
CN105
⑦
②
KR-24 board
⑧
⑦
③ Connectors CN101, 102
MF-245 board
⑫ MJ-63, VR-43 boards
⑨ Connectors CN101, 103, 104
⑪ +BVTP3 × 12

2-4. MF-246 BOARD

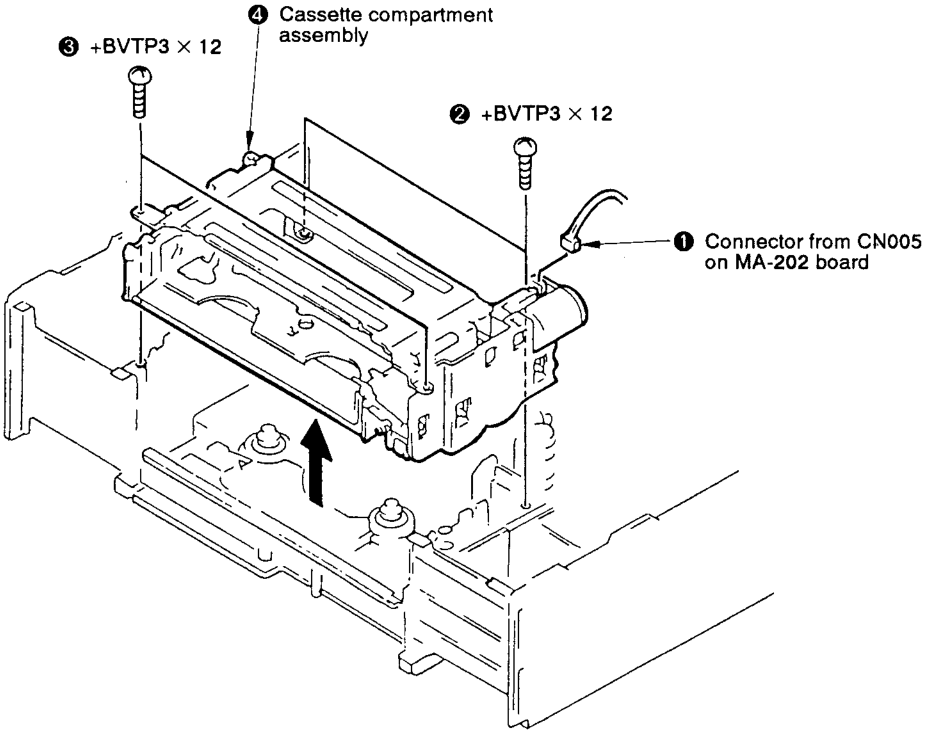

Four claws
① CN902 (MF-245 board)
CN703, 704 (PT-97 board)
MF-246 board
B
A
② +BVTP3 × 12

③ Disconnect connectors
as shown above and
remove MF-246 board

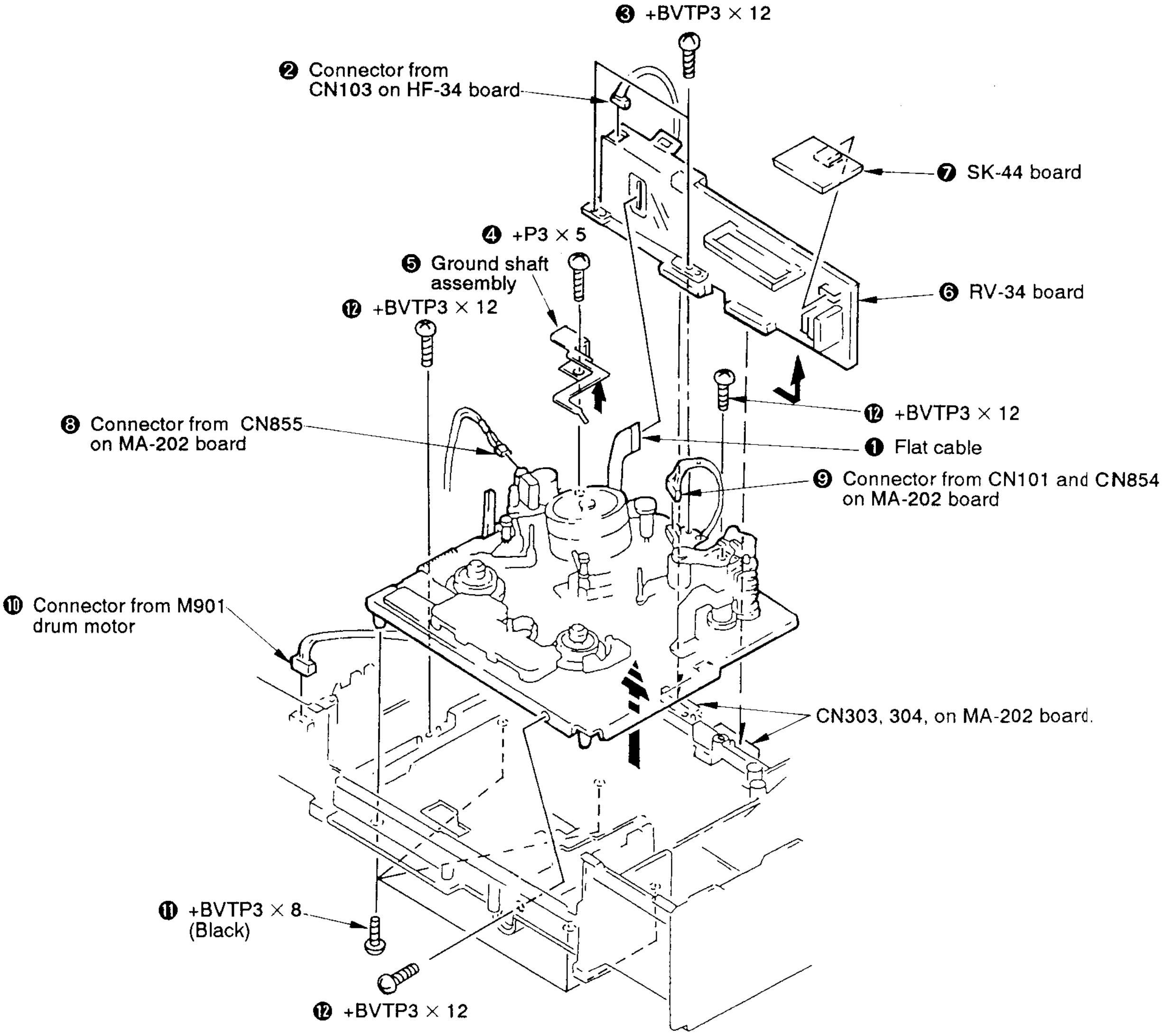
2-5. MF-245 BOARD


❷ Two claws
CN402 (MA-202 board)
❶ +BVPB3 × 12
MF-245 board
Ⓑ Ⓐ
❸ Disconnect connector as shown above and remove MF-245 board.

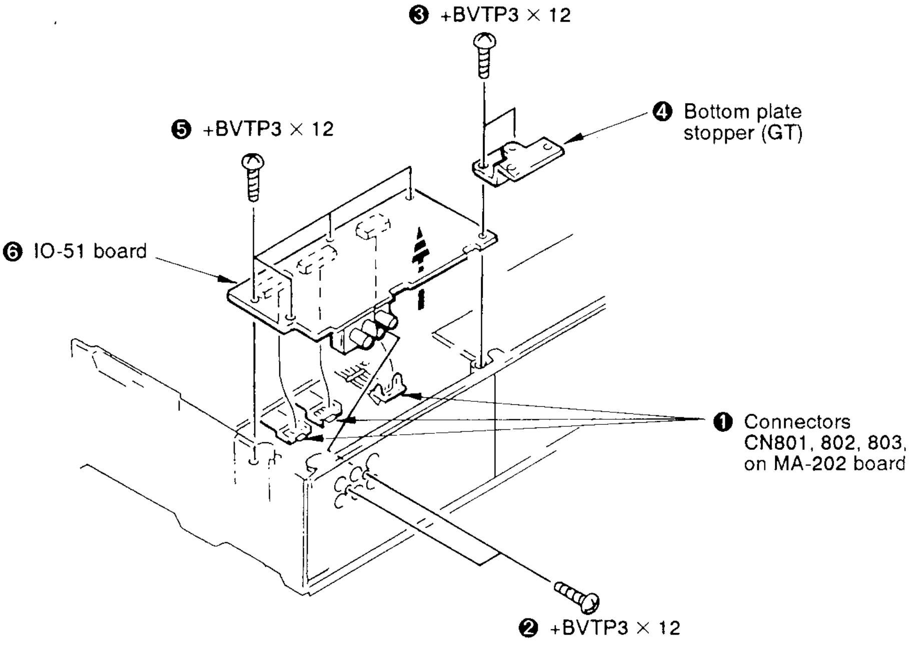
2-6. CASSETTE COMPARTMENT ASSEMBLY


❹ Cassette compartment assembly
❸ +BVTP3 × 12
❷ +BVTP3 × 12
❶ Connector from CN005 on MA-202 board

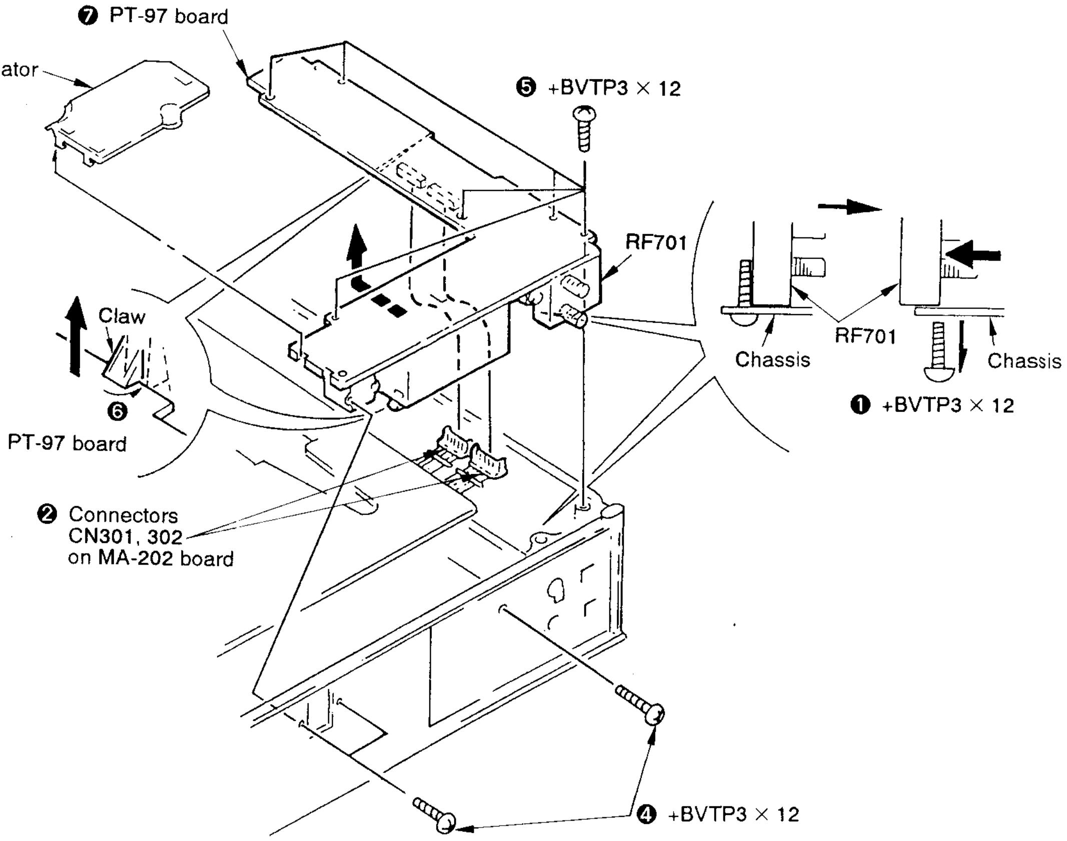
2-7. RV-34, SK-44 BOARDS AND MD ASSEMBLY


❸ +BVTP3 × 12
❷ Connector from CN103 on HF-34 board
❼ SK-44 board
❹ +P3 × 5
❺ Ground shaft assembly
⓬ +BVTP3 × 12
❻ RV-34 board
⓬ +BVTP3 × 12
❽ Connector from CN855 on MA-202 board
❶ Flat cable
❾ Connector from CN101 and CN854 on MA-202 board
❿ Connector from M901 drum motor
CN303, 304, on MA-202 board.
⓫ +BVTP3 × 8 (Black)
⓬ +BVTP3 × 12

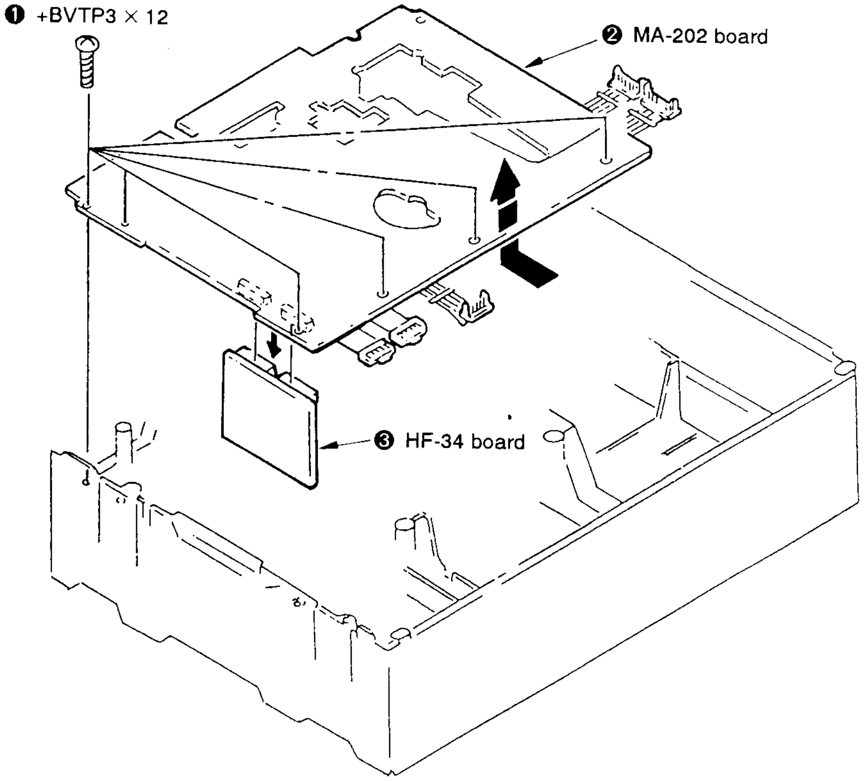
2-8. IO-51 BOARD


❸ +BVTP3 × 12
❹ Bottom plate stopper (GT)
❺ +BVTP3 × 12
❻ IO-51 board
❶ Connectors CN801, 802, 803, on MA-202 board
❷ +BVTP3 × 12

2-9. PT-97 BOARD

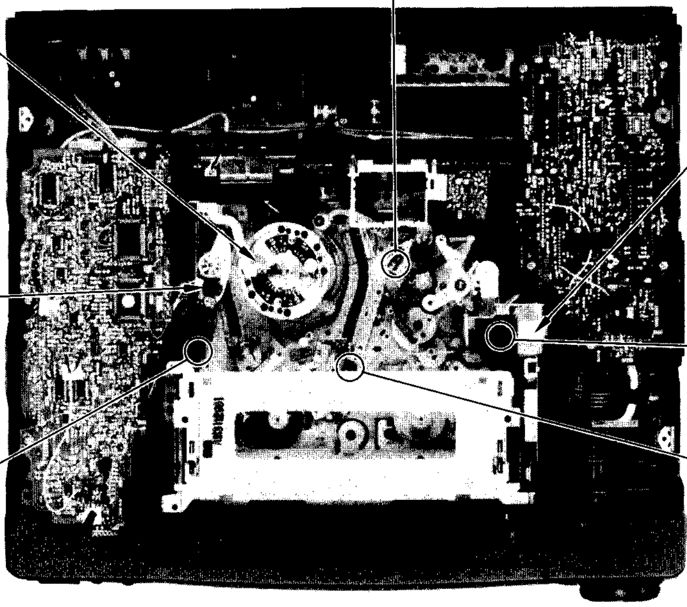

❼ PT-97 board
❽ PS insulator
❺ +BVTP3 × 12
RF701
Claw
❻
PT-97 board
RF701
Chassis
Chassis
❶ +BVTP3 × 12
❷ Connectors
CN301, 302
on MA-202 board
❹ +BVTP3 × 12

2-10. MA-202 AND HF-34 BOARDS


❶ +BVTP3 × 12
❷ MA-202 board
❸ HF-34 board

2-11. INTERNAL VIEWS

– Top Side –



Drum ass'y
DZH-54A-R 8-848-618-11 (X731)
DZH-68A-R 8-848-624-11 (Except X731)
Upper drum ass'y
DZR-54-R 8-848-621-01 (X731)
DZR-68-R 8-848-625-01 (Except X731)

ACE head block ass'y
A-6761-129-C

M904
Loading motor
X-3727-784-1

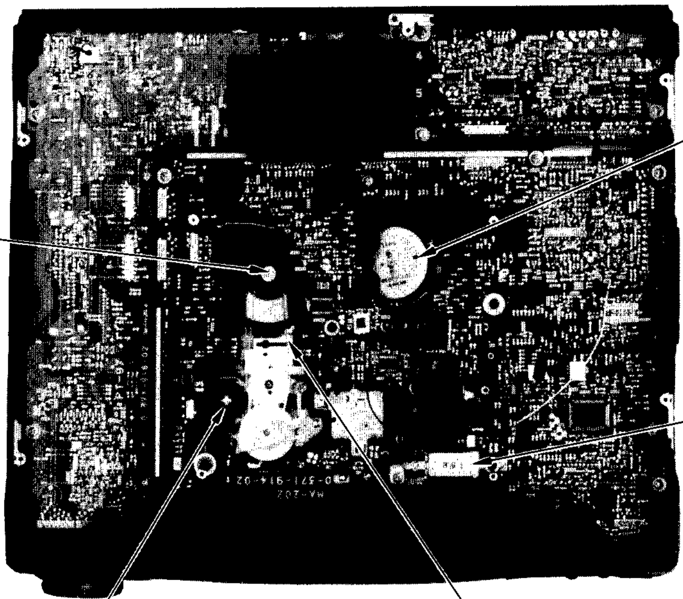
FE head
1-543-647-11

Q001
Tape top sensor
8-729-926-31

D001
Tape top/end LED
8-719-985-00

Q002
Tape end sensor
8-729-926-31

– Bottom Side –



M901
Drum motor

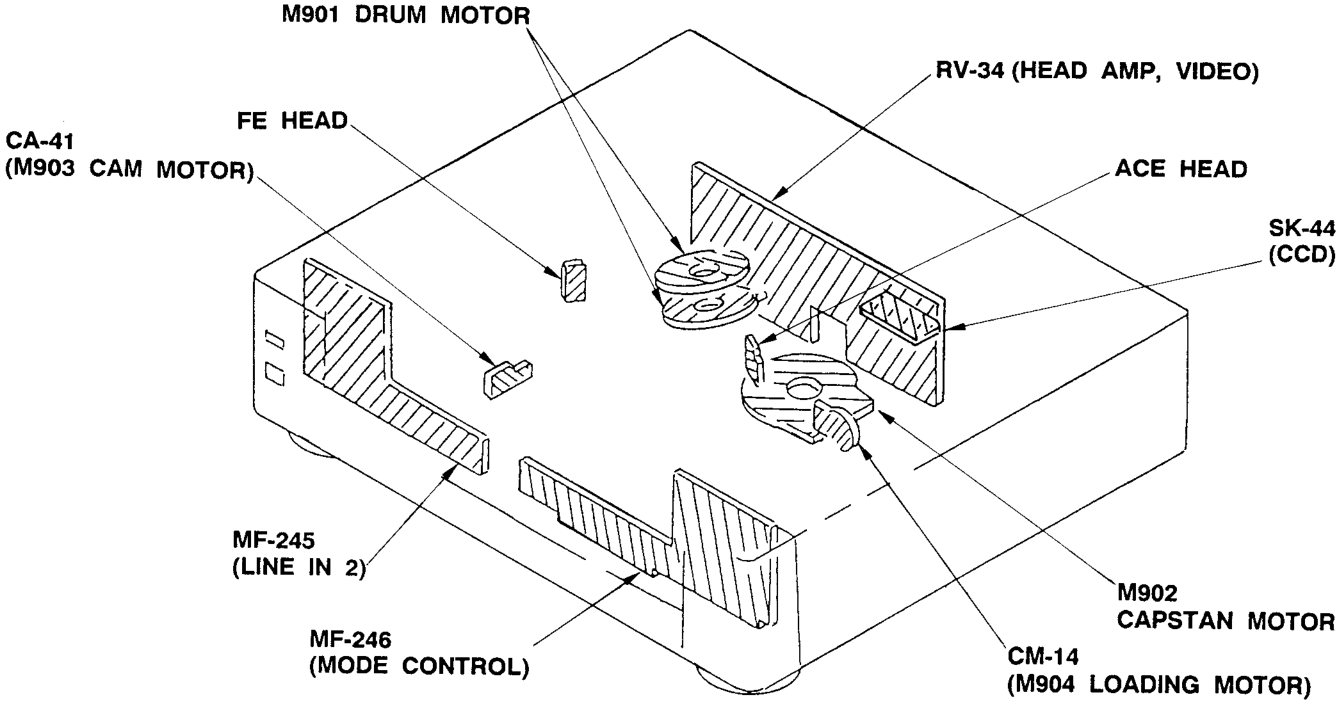
M902
Capstan motor
8-835-489-11

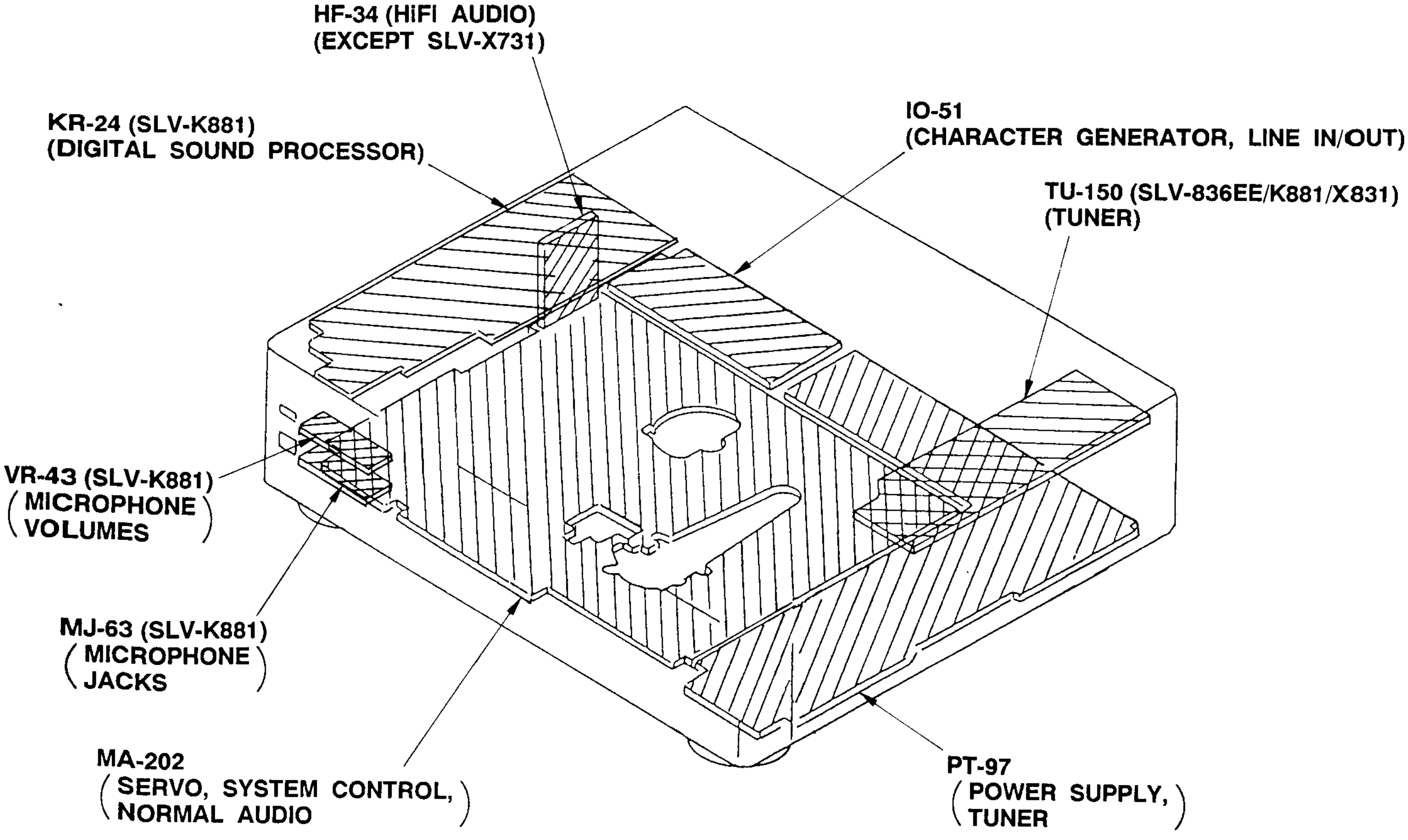
M903
Cam motor
X-3733-302-1

S1
Rotary switch
1-571-920-11

Timing belt
3-736-013-01

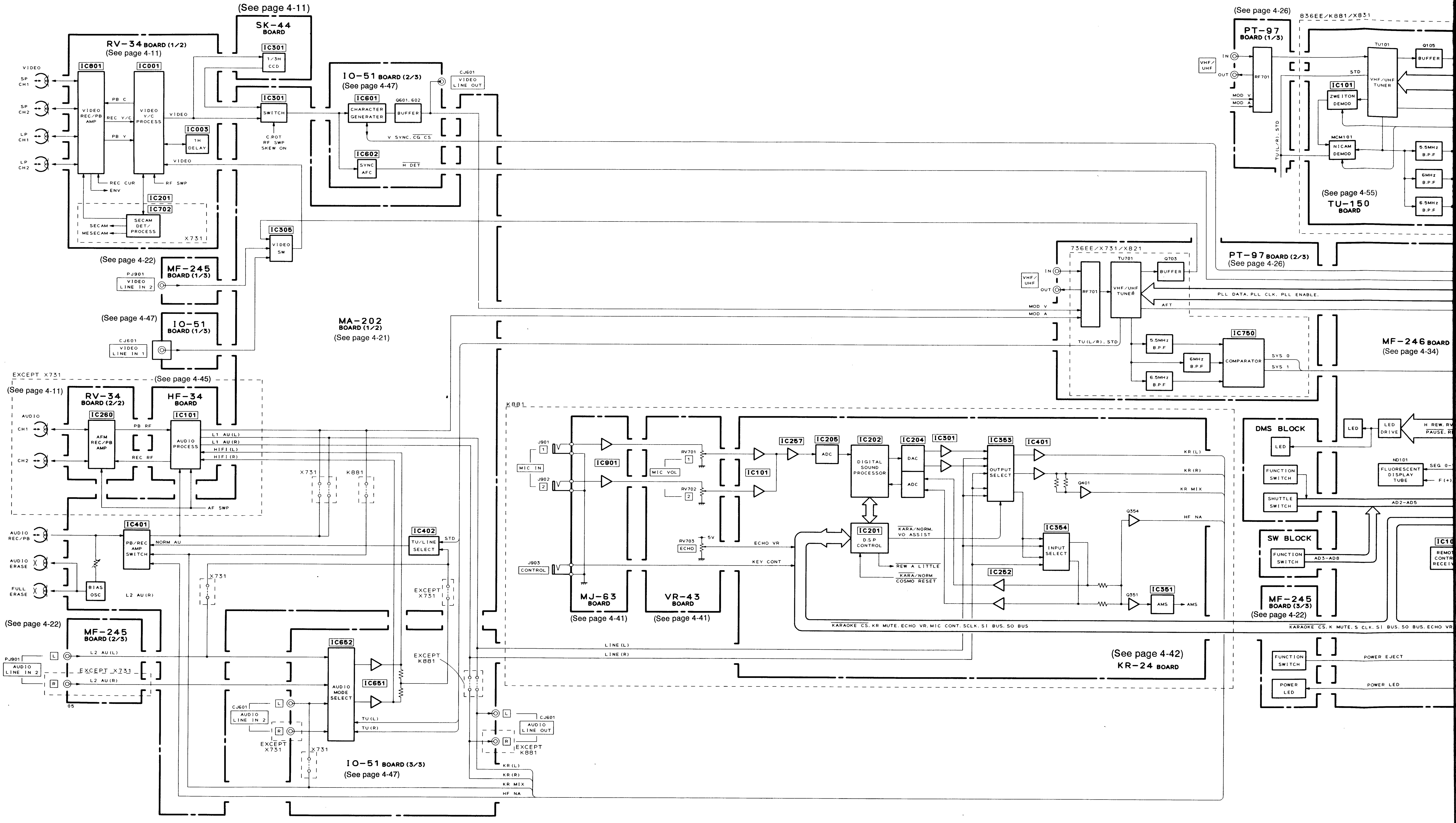
2-12. CIRCUIT BOARDS LOCATION

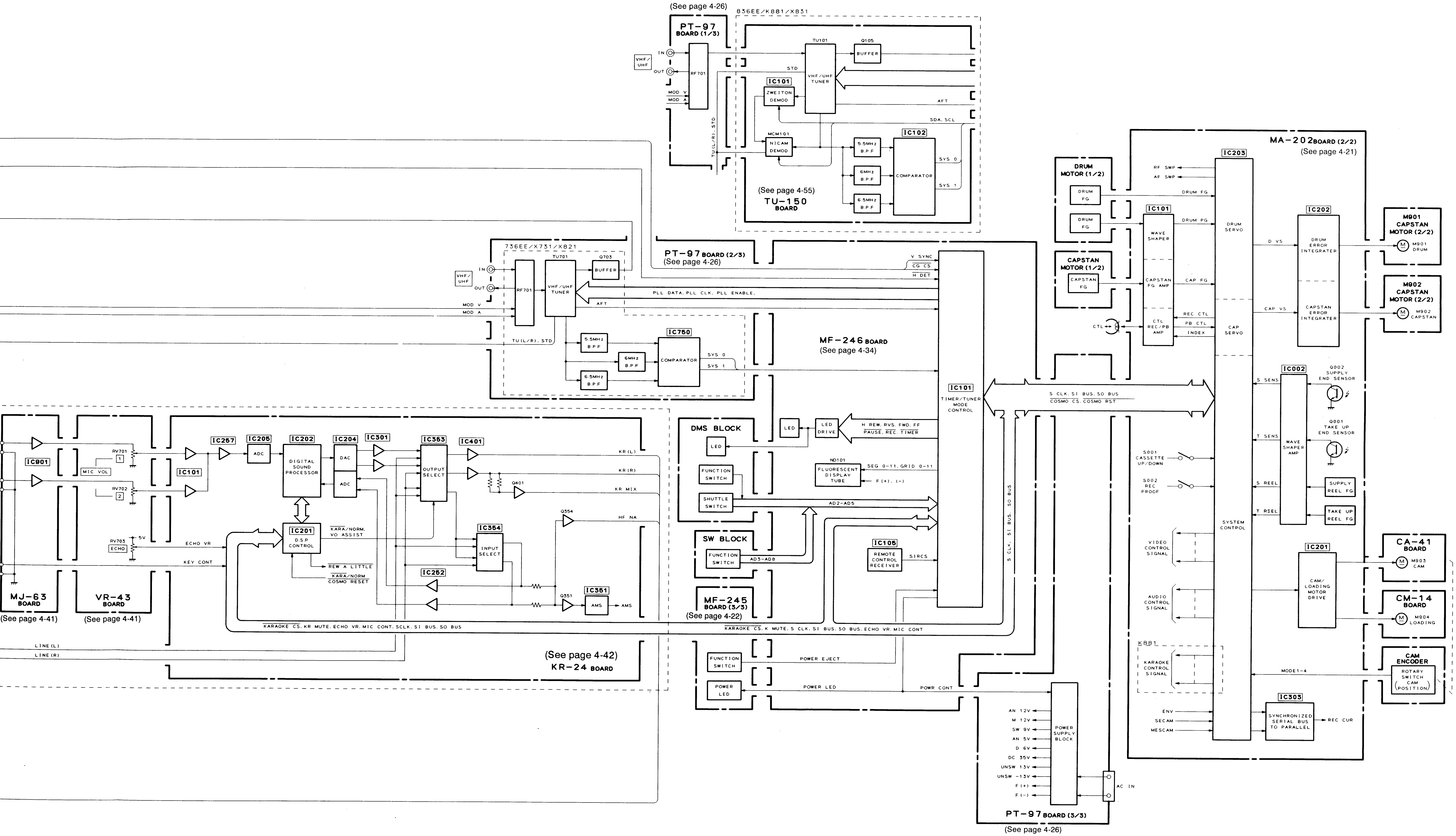

M901 DRUM MOTOR
RV-34 (HEAD AMP, VIDEO)
FE HEAD
CA-41
(M903 CAM MOTOR)
ACE HEAD
SK-44
(CCD)
MF-245
(LINE IN 2)
MF-246
(MODE CONTROL)
M902
CAPSTAN MOTOR
CM-14
(M904 LOADING MOTOR)


HF-34 (HiFi AUDIO)
(EXCEPT SLV-X731)
KR-24 (SLV-K881)
(DIGITAL SOUND PROCESSOR)
IO-51
(CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831)
(TUNER)
VR-43 (SLV-K881)
(MICROPHONE VOLUMES)
MJ-63 (SLV-K881)
(MICROPHONE JACKS)
MA-202
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97
(POWER SUPPLY, TUNER)

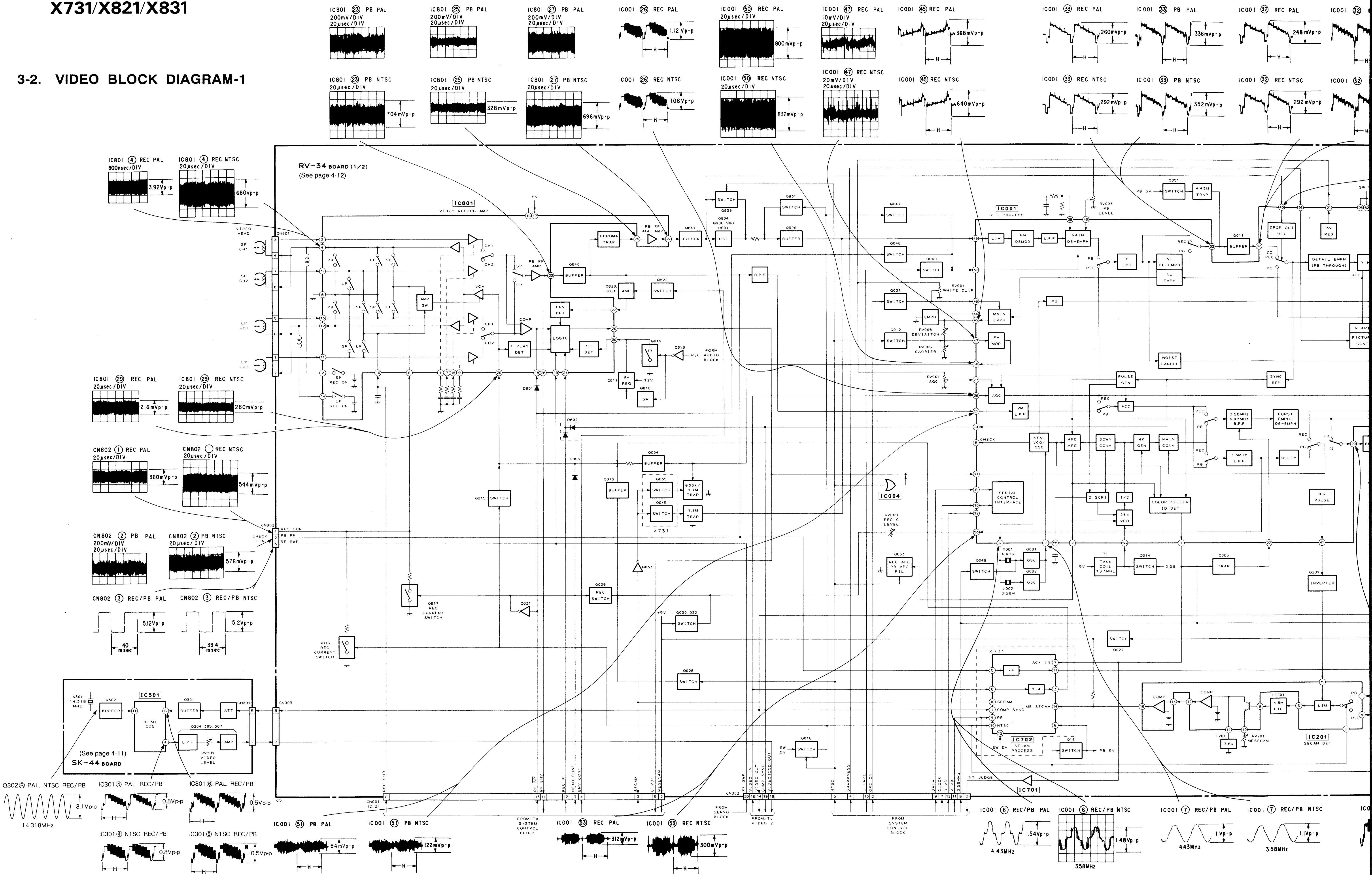
SECTION 3
BLOCK DIAGRAMS

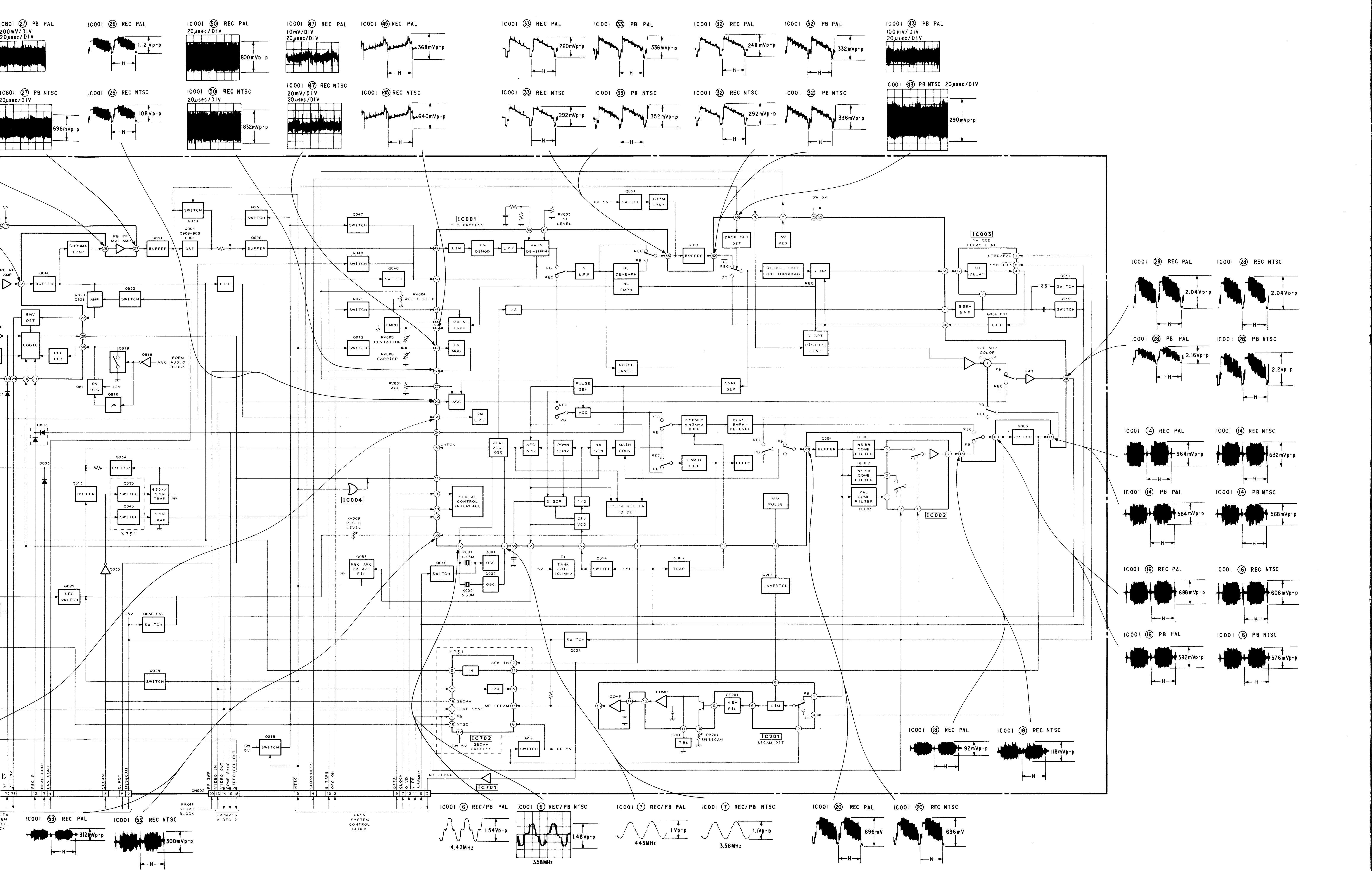
3-1. OVERALL BLOCK DIAGRAM


(See page 4-11)
SK-44 BOARD
IC301 1/3H CCD
IC301 SWITCH
C.ROT RF SWP SKEW ON
RV-34 BOARD (1/2)
(See page 4-11)
VIDEO
SP CH1
SP CH2
LP CH1
LP CH2
IC801 VIDEO REC/PB AMP
IC001 VIDEO Y/C PROCESS
PB C
REC Y/C
PB Y
VIDEO
IC003 1H DELAY
REC CUR
ENV
RF SWP
IC201
IC702
SECAM DET/PROCESS
SECAM
MESECAM
X731
IO-51 BOARD (2/3)
(See page 4-47)
CJ601 VIDEO LINE OUT
IC601 CHARACTER GENERATER
Q601, 602 BUFFER
V SYNC, CG CS
IC602 SYNC AFC
H DET
IC305 VIDEO SW
(See page 4-22)
MF-245 BOARD (1/3)
PJ901 VIDEO LINE IN 2
(See page 4-47)
IO-51 BOARD (1/3)
CJ601 VIDEO LINE IN 1
MA-202 BOARD (1/2)
(See page 4-21)
EXCEPT X731
(See page 4-11)
(See page 4-45)
RV-34 BOARD (2/2)
HF-34 BOARD
AUDIO
CH1
CH2
IC260 AFM REC/PB AMP
PB RF
REC RF
IC101 AUDIO PROCESS
L1 AU(L)
L1 AU(R)
HIFI(L)
HIFI(R)
AF SWP
X731
K881
AUDIO REC/PB
AUDIO ERASE
FULL ERASE
IC401 PB/REC AMP SWITCH
NORM AU
BIAS OSC
L2 AU(R)
IC402 TU/LINE SELECT
STD
EXCEPT X731
(See page 4-22)
MF-245 BOARD (2/3)
PJ901 AUDIO LINE IN 2
L
R
L2 AU(L)
L2 AU(R)
EXCEPT X731
05
IC652 AUDIO MODE SELECT
IC651
EXCEPT K881
CJ601 AUDIO LINE IN 2
EXCEPT X731
X731
TU(L)
TU(R)
IO-51 BOARD (3/3)
(See page 4-47)
CJ601 AUDIO LINE OUT
EXCEPT K881
KR(L)
KR(R)
KR MIX
HF NA
LINE(L)
LINE(R)
K881
J901
J902
J903
MIC IN
CONTROL
IC901
MIC VOL
RV701
RV702
RV703
ECHO
5V
MJ-63 BOARD
(See page 4-41)
VR-43 BOARD
(See page 4-41)
IC101
IC257
IC205 ADC
IC202 DIGITAL SOUND PROCESSOR
IC204 DAC ADC
IC301
IC353 OUTPUT SELECT
IC401
Q401
Q354
Q351
IC201 D.S.P CONTROL
KARA/NORM. VO ASSIST
ECHO VR
KEY CONT
REW A LITTLE
KARA/NORM COSMO RESET
IC354 INPUT SELECT
IC252
IC351 AMS
AMS
KR(L)
KR(R)
KR MIX
HF NA
KARAOKE CS, KR MUTE, ECHO VR, MIC CONT, SCLK, SI BUS, SO BUS
(See page 4-42)
KR-24 BOARD
(See page 4-26)
836EE/K881/X831
PT-97 BOARD (1/3)
VHF/UHF
IN
OUT
RF701
MOD V
MOD A
TU(L/R), STD
TU101 VHF/UHF TUNER
Q105 BUFFER
STD
IC101 ZWEITON DEMOD
MCM101 NICAM DEMOD
5.5MHz B.P.F
6MHz B.P.F
6.5MHz B.P.F
(See page 4-55)
TU-150 BOARD
PT-97 BOARD (2/3)
(See page 4-26)
736EE/X731/XB21
TU701 VHF/UHF TUNER
Q703 BUFFER
PLL DATA, PLL CLK, PLL ENABLE.
AFT
MOD V
MOD A
TU(L/R), STD
5.5MHz B.P.F
6MHz B.P.F
6.5MHz B.P.F
IC750 COMPARATOR
SYS 0
SYS 1
MF-246 BOARD
(See page 4-34)
DMS BLOCK
LED
FUNCTION SWITCH
SHUTTLE SWITCH
LED DRIVE
H REW, RV
PAUSE, R
ND101 FLUORESCENT DISPLAY TUBE
SEG 0-
F(+)
AD2-AD5
SW BLOCK
FUNCTION SWITCH
AD3-AD8
IC1
REMO CONTR RECEI
MF-245 BOARD (3/3)
(See page 4-22)
KARAOKE CS, K MUTE, S CLK, SI BUS, SO BUS, ECHO VR
FUNCTION SWITCH
POWER EJECT
POWER LED
POWER LED

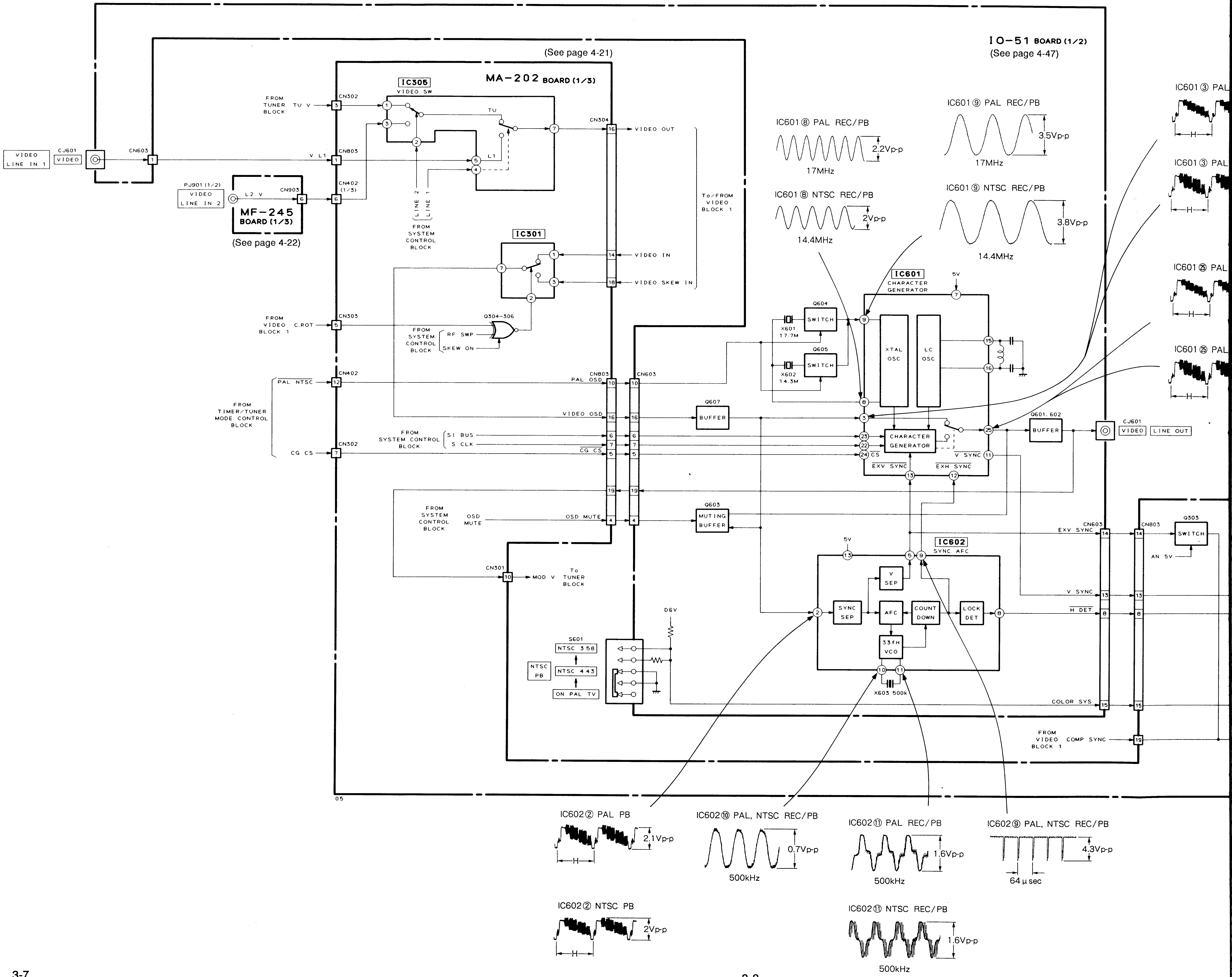

(See page 4-26)
PT-97 BOARD (1/3)
836EE/K881/X831
VHF/UHF
IN
OUT
RF701
MOD V
MOD A
TU(L/R), STD
TU101
VHF/UHF TUNER
Q105
BUFFER
STD
IC101
ZWEITON DEMOD
AFT
SDA, SCL
MCM101
NICAM DEMOD
IC102
5.5MHz B.P.F
6MHz B.P.F
6.5MHz B.P.F
COMPARATOR
SYS 0
SYS 1
(See page 4-55)
TU-150 BOARD
PT-97 BOARD (2/3)
(See page 4-26)
736EE/X731/X821
TU701
Q703
BUFFER
PLL DATA, PLL CLK, PLL ENABLE,
IC750
MF-246 BOARD
(See page 4-34)
V SYNC
CG CS
H DET
IC101
TIMER/TUNER MODE CONTROL
S CLK, SI BUS, SO BUS
COSMO CS, COSMO RST
DMS BLOCK
LED
LED DRIVE
H REW, RVS, FWD, FF
PAUSE, REC, TIMER
FUNCTION SWITCH
SHUTTLE SWITCH
ND101
FLUORESCENT DISPLAY TUBE
SEG 0-11, GRID 0-11
F(+), (-)
AD2-AD5
SW BLOCK
AD3-AD8
IC105
REMOTE CONTROL RECEIVER
SIRCS
MF-245 BOARD (3/3)
(See page 4-22)
POWER EJECT
POWER LED
POWR CONT
MA-202 BOARD (2/2)
(See page 4-21)
DRUM MOTOR (1/2)
DRUM FG
DRUM PG
CAPSTAN MOTOR (1/2)
CAPSTAN FG
IC101
WAVE SHAPER
CAPSTAN FG AMP
CTL REC/PB AMP
CTL
RF SWP
AF SWP
CAP FG
REC CTL
PB CTL
INDEX
IC203
DRUM SERVO
CAP SERVO
SYSTEM CONTROL
IC202
DRUM ERROR INTEGRATER
CAPSTAN ERROR INTEGRATER
D VS
CAP VS
M901 CAPSTAN MOTOR (2/2)
M901 DRUM
M902 CAPSTAN MOTOR (2/2)
M902 CAPSTAN
IC002
WAVE SHAPER AMP
Q002 SUPPLY END SENSOR
Q001 TAKE UP END SENSOR
S SENS
T SENS
S REEL
T REEL
SUPPLY REEL FG
TAKE UP REEL FG
S001 CASSETTE UP/DOWN
S002 REC PROOF
VIDEO CONTROL SIGNAL
AUDIO CONTROL SIGNAL
K881
KARAOKE CONTROL SIGNAL
IC201
CAM/LOADING MOTOR DRIVE
CA-41 BOARD
M903 CAM
CM-14 BOARD
M904 LOADING
CAM ENCODER
ROTARY SWITCH (CAM POSITION)
MODE1-4
IC303
SYNCHRONIZED SERIAL BUS TO PARALLEL
REC CUR
ENV
SECAM
MESCAM
POWER SUPPLY BLOCK
AN 12V
M 12V
SW 9V
AN 5V
D 6V
DC 35V
UNSW 13V
UNSW -13V
F(+)
F(-)
AC IN
PT-97 BOARD (3/3)
(See page 4-26)
IC801
RV701
MIC VOL
RV702
RV703
ECHO
5V
MJ-63 BOARD
(See page 4-41)
VR-43 BOARD
(See page 4-41)
IC101
IC257
IC205
ADC
IC202
DIGITAL SOUND PROCESSOR
IC204
DAC
ADC
IC301
IC353
OUTPUT SELECT
IC401
KR(L)
KR(R)
KR MIX
Q401
Q354
HF NA
IC201
D.S.P CONTROL
KARA/NORM, VO ASSIST
REW A LITTLE
KARA/NORM
COSMO RESET
ECHO VR
KEY CONT
IC354
INPUT SELECT
IC252
Q351
IC351
AMS
KARAOKE CS, KR MUTE, ECHO VR, MIC CONT, SCLK, SI BUS, SO BUS
KARAOKE CS, K MUTE, S CLK, SI BUS, SO BUS, ECHO VR, MIC CONT
LINE(L)
LINE(R)
(See page 4-42)
KR-24 BOARD

3-2. VIDEO BLOCK DIAGRAM-1

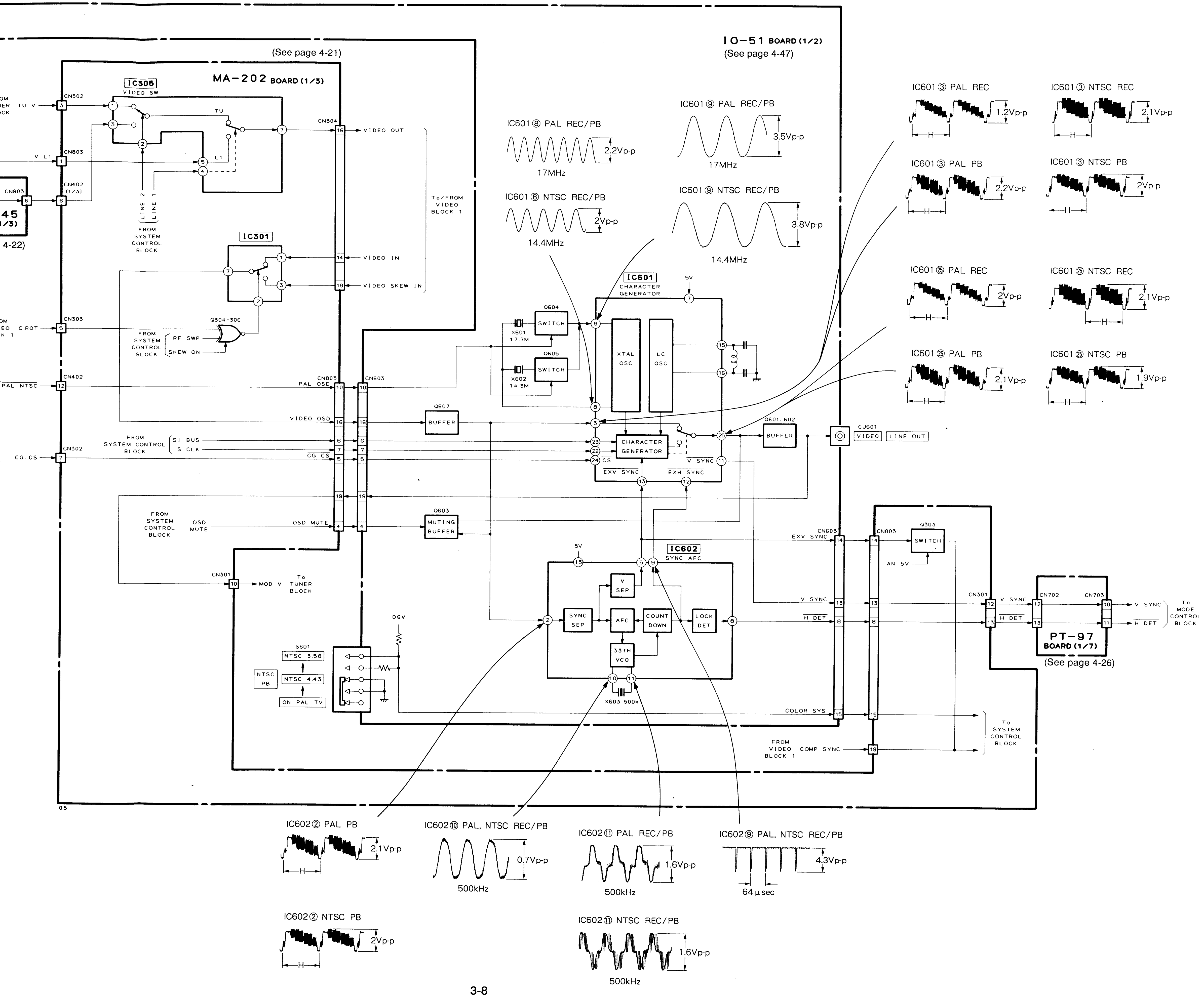

IC801 ㉓ PB PAL 200mV/DIV 20μsec/DIV
IC801 ㉕ PB PAL 200mV/DIV 20μsec/DIV
IC801 ㉗ PB PAL 200mV/DIV 20μsec/DIV
IC001 ㉖ REC PAL 1.12Vp-p
IC001 (50) REC PAL 20μsec/DIV 800mVp-p
IC001 ㊼ REC PAL 10mV/DIV 20μsec/DIV
IC001 ㊺ REC PAL 368mVp-p
IC001 ㉝ REC PAL 260mVp-p
IC001 ㉝ PB PAL 336mVp-p
IC001 ㉜ REC PAL 248mVp-p
IC801 ㉓ PB NTSC 20μsec/DIV 704mVp-p
IC801 ㉕ PB NTSC 20μsec/DIV 328mVp-p
IC801 ㉗ PB NTSC 20μsec/DIV 696mVp-p
IC001 ㉖ REC NTSC 1.08Vp-p
IC001 (50) REC NTSC 20μsec/DIV 832mVp-p
IC001 ㊼ REC NTSC 20mV/DIV 20μsec/DIV
IC001 ㊺ REC NTSC 640mVp-p
IC001 ㉝ REC NTSC 292mVp-p
IC001 ㉝ PB NTSC 352mVp-p
IC001 ㉜ REC NTSC 292mVp-p
IC801 ④ REC PAL 800nsec/DIV 3.92Vp-p
IC801 ④ REC NTSC 20μsec/DIV 680Vp-p
RV-34 BOARD (1/2)
(See page 4-12)
IC801 VIDEO REC/PB AMP
IC001 Y.C PROCESS
VIDEO HEAD
SP CH1
SP CH2
LP CH1
LP CH2
CN801
CHROMA TRAP
PB RF AGC AMP
BUFFER
DSF
SWITCH
SP PB RF AMP
COMP
T PLAY DET
LOGIC
ENV DET
REC DET
AMP SW
VCA
FORM AUDIO BLOCK
9V REG
LIM
FM DEMOD
L.P.F
MAIN DE-EMPH
NL DE-EMPH
NL EMPH
DROP OUT DET
DETAIL EMPH (PB THROUGH)
3V REG
4.43M TRAP
RV003 PB LEVEL
RV004 WHITE CLIP
RV005 DEVIATION
RV006 CARRIER
RV001 AGC
EMPH
MAIN EMPH
FM MOD
AGC
2M L.P.F
NOISE CANCEL
PULSE GEN
SYNC SEP
ACC
3.58MHz 4.43MHz B.P.F
BURST EMPH/ DE-EMPH
1.3MHz L.P.F
DELEY
XTAL VCO/OSC
AFC APC
DOWN CONV
4fl GEN
MAIN CONV
SERIAL CONTROL INTERFACE
DISCRI
2fc VCO
COLOR KILLER ID DET
BG PULSE
INVERTER
IC004
RV009 REC C LEVEL
REC AFC PB APC FIL
X001 4.43M
X002 3.58M
OSC
TANK COIL 10.1MHz
TRAP
X731
x4
1/4
IC702 SECAM PROCESS
IC701
COMP
CF201 4.5M FIL
T201
RV201 MESECAM
IC201 SECAM DET
Q815 SWITCH
Q817 REC CURRENT SWITCH
Q816 REC CURRENT SWITCH
Q034 BUFFER
Q013 BUFFER
Q035 SWITCH
Q045 SWITCH
630k/1.1M TRAP
1.1M TRAP
Q029 REC SWITCH
Q030, 032 SWITCH
Q028 SWITCH
Q018 SWITCH
Q027 SWITCH
Q16 SWITCH
IC801 ㉙ REC PAL 20μsec/DIV 216mVp-p
IC801 ㉙ REC NTSC 20μsec/DIV 280mVp-p
CN802 ① REC PAL 20μsec/DIV 360mVp-p
CN802 ① REC NTSC 20μsec/DIV 544mVp-p
CN802 ② PB PAL 200mV/DIV 20μsec/DIV
CN802 ② PB NTSC 20μsec/DIV 576mVp-p
CN802 ③ REC/PB PAL 5.12Vp-p 40 msec
CN802 ③ REC/PB NTSC 5.2Vp-p 33.4 msec
CN802 REC CUR PB RF RF SWP
CHECK PIN
SK-44 BOARD
(See page 4-11)
IC301 1/3H CCD
X301 14.318 MHz
Q302 BUFFER
Q301 BUFFER
ATT
Q304, 305, 307 L.P.F AMP
RV301 VIDEO LEVEL
CN301
CN003
CN001 (2/2)
CN002
FROM/To SYSTEM CONTROL BLOCK
FROM SERVO BLOCK
FROM/To VIDEO 2
FROM SYSTEM CONTROL BLOCK
Q302 ⑧ PAL, NTSC REC/PB 3.1Vp-p 14.318MHz
IC301 ④ PAL REC/PB 0.8Vp-p
IC301 ⑥ PAL REC/PB 0.5Vp-p
IC301 ④ NTSC REC/PB 0.8Vp-p
IC301 ⑥ NTSC REC/PB 0.5Vp-p
IC001 (51) PB PAL 84mVp-p
IC001 (51) PB NTSC 122mVp-p
IC001 (53) REC PAL 312mVp-p
IC001 (53) REC NTSC 300mVp-p
IC001 ⑥ REC/PB PAL 1.54Vp-p 4.43MHz
IC001 ⑥ REC/PB NTSC 1.48Vp-p 3.58MHz
IC001 ⑦ REC/PB PAL 1Vp-p 4.43MHz
IC001 ⑦ REC/PB NTSC 1.1Vp-p 3.58MHz


IC801 (27) PB PAL 200mV/DIV 20μsec/DIV
IC001 (26) REC PAL 1.12Vp-p
IC001 (50) REC PAL 20μsec/DIV 800mVp-p
IC001 (47) REC PAL 10mV/DIV 20μsec/DIV
IC001 (45) REC PAL 368mVp-p
IC001 (33) REC PAL 260mVp-p
IC001 (33) PB PAL 336mVp-p
IC001 (32) REC PAL 248mVp-p
IC001 (32) PB PAL 332mVp-p
IC001 (43) PB PAL 100mV/DIV 20μsec/DIV
IC801 (27) PB NTSC 20μsec/DIV 696mVp-p
IC001 (26) REC NTSC 1.08Vp-p
IC001 (50) REC NTSC 20μsec/DIV 832mVp-p
IC001 (47) REC NTSC 20mV/DIV 20μsec/DIV
IC001 (45) REC NTSC 640mVp-p
IC001 (33) REC NTSC 292mVp-p
IC001 (33) PB NTSC 352mVp-p
IC001 (32) REC NTSC 292mVp-p
IC001 (32) PB NTSC 336mVp-p
IC001 (43) PB NTSC 20μsec/DIV 290mVp-p
H
IC001 Y.C PROCESS
IC003 1H CCD DELAY LINE
SWITCH Q939
Q904 Q906-908 D901 DSF
Q931 SWITCH
Q909 BUFFER
CHROMA TRAP
PB RF AGC AMP
Q841 BUFFER
PB RF AMP
Q840 BUFFER
Q820, Q821 AMP
Q822 SWITCH
ENV DET
LOGIC
REC DET
Q819
Q818
FORM AUDIO BLOCK
Q811 9V REG
-12V
Q810 SW
B.P.F
Q047 SWITCH
Q048 SWITCH
Q040 SWITCH
RV004 WHITE CLIP
Q021 SWITCH
EMPH
RV005 DEVIAITON
Q012 SWITCH
RV006 CARRIER
RV001 AGC
LIM
FM DEMOD
L.P.F
MAIN DE-EMPH
RV003 PB LEVEL
MAIN EMPH
FM MOD
AGC
2M L.P.F
CHECK
SERIAL CONTROL INTERFACE
IC004
RV009 REC C LEVEL
Q053 REC AFC PB APC FIL
Q049 SWITCH
X001 4.43M
X002 3.58M
Q001 OSC
Q002 OSC
XTAL VCO OSC
AFC APC
DOWN CONV
4φ GEN
MAIN CONV
DISCRI
1/2
2fc VCO
COLOR KILLER ID DET
×2
PULSE GEN
ACC
T1 TANK COIL 10.1MHz
5V
Q014 SWITCH
3.58
Q005 TRAP
PB 5V
Q051 SWITCH
4.43M TRAP
Y L.P.F
NL DE-EMPH
NL EMPH
Q011 BUFFER
DROP OUT DET
3V REG
SW 5V
DETAIL EMPH (PB THROUGH)
Y NR
DO
V APT
PICTURE CONT
NOISE CANCEL
SYNC SEP
NTSC/PAL
3.58/4.43
1H DELAY
8.86M B.P.F
Q006, 007 L.P.F
Q041 SWITCH
Q046 SWITCH
Y/C MIX COLOR KILLER
6dB
REC EE
3.58MHz 4.43MHz B.P.F
BURST EMPH/ DE-EMPH
1.3MHz L.P.F
DELEY
Q004 BUFFER
DL001 N3.58 COMB FILTER
DL002 N4.43 COMB FILTER
PAL COMB FILTER DL003
IC002
Q003 BUFFER
B.G PULSE
Q201 INVERTER
Q034 BUFFER
D802
D803
Q013 BUFFER
Q035 SWITCH
Q045 SWITCH
630k/1.1M TRAP
1.1M TRAP
X731
Q033
Q029 REC SWITCH
+5V
Q030, 032 SWITCH
Q028 SWITCH
Q027 SWITCH
X731
ACK IN
×4
1/4
SECAM
COMP SYNC
ME SECAM
PB
NTSC
IC702 SECAM PROCESS
SW 5V
Q16 SWITCH
PB 5V
Q018 SWITCH
SW 5V
COMP
CF201 4.5M FIL
LIM
T201 7.8k
RV201 MESECAM
IC201 SECAM DET
NT JUDGE
IC701
CN002
RF SP
RF ENV
REC P
HEAD CONT
ENV CONT
SECAM
C ROT
MESECAM
RF SWP
VIDEO IN
VIDEO OUT
COMP SYNC
VIDEO(CCD)OUT
NTSC
SHARPNESS
E TAPE
ORC ON
DATA
CLOCK
Q VD
V PB
3.58MHz
FROM SERVO BLOCK
FROM/TO VIDEO 2
FROM SYSTEM CONTROL BLOCK
IC001 (28) REC PAL 2.04Vp-p
IC001 (28) REC NTSC 2.04Vp-p
IC001 (28) PB PAL 2.16Vp-p
IC001 (28) PB NTSC 2.2Vp-p
IC001 (14) REC PAL 664mVp-p
IC001 (14) REC NTSC 632mVp-p
IC001 (14) PB PAL 584mVp-p
IC001 (14) PB NTSC 568mVp-p
IC001 (16) REC PAL 688mVp-p
IC001 (16) REC NTSC 608mVp-p
IC001 (16) PB PAL 592mVp-p
IC001 (16) PB NTSC 576mVp-p
IC001 (18) REC PAL 92mVp-p
IC001 (18) REC NTSC 118mVp-p
IC001 (53) REC PAL 312mVp-p
IC001 (53) REC NTSC 300mVp-p
IC001 (6) REC/PB PAL 1.54Vp-p 4.43MHz
IC001 (6) REC/PB NTSC 1.48Vp-p 3.58MHz
IC001 (7) REC/PB PAL 1Vp-p 4.43MHz
IC001 (7) REC/PB NTSC 1.1Vp-p 3.58MHz
IC001 (20) REC PAL 696mV
IC001 (20) REC NTSC 696mV

3-3. VIDEO BLOCK DIAGRAM-2

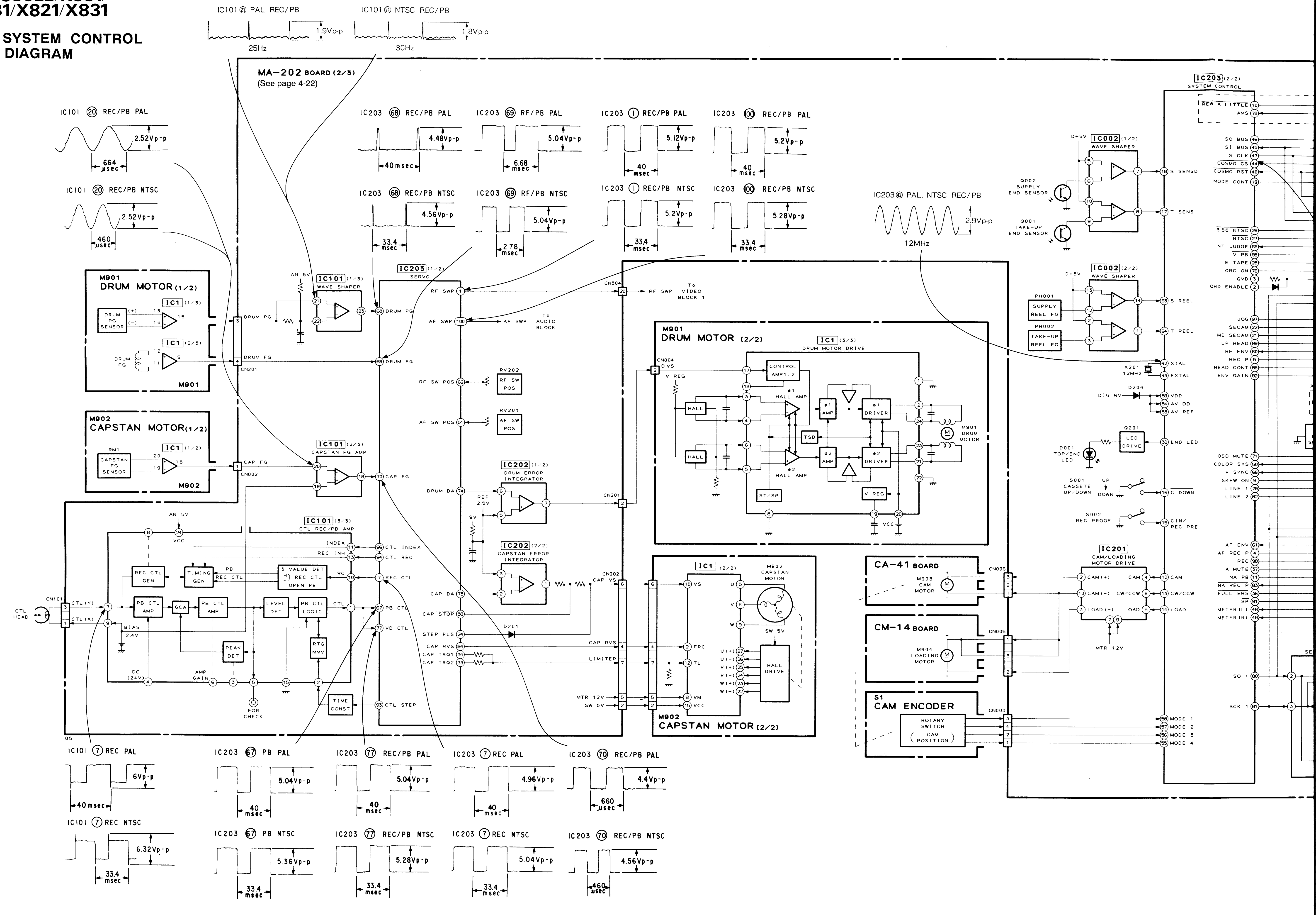


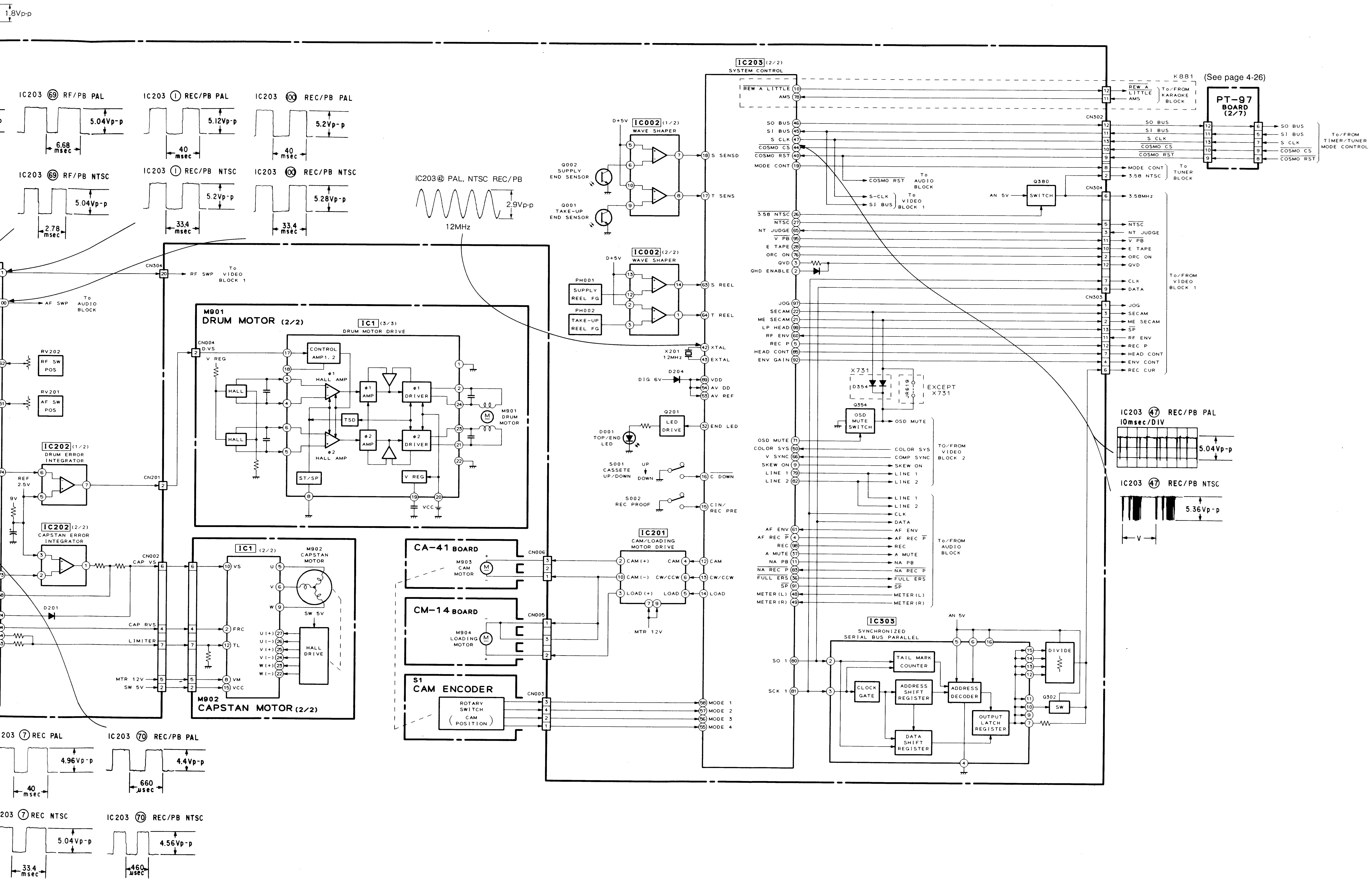
MA-202 BOARD (1/3)
(See page 4-21)
IO-51 BOARD (1/2)
(See page 4-47)
MF-245 BOARD (1/3)
(See page 4-22)
VIDEO LINE IN 1
CJ601 VIDEO
CN603
PJ901 (1/2) VIDEO LINE IN 2
L2 V
CN903
FROM TUNER BLOCK TU V
CN302
V L1
CN803
CN402 (1/3)
IC305 VIDEO SW
TU
L1
LINE 2
LINE 1
FROM SYSTEM CONTROL BLOCK
CN304
VIDEO OUT
To/FROM VIDEO BLOCK 1
IC301
VIDEO IN
VIDEO SKEW IN
FROM VIDEO BLOCK 1 C.ROT
CN303
Q304-306
FROM SYSTEM CONTROL BLOCK
RF SWP
SKEW ON
FROM TIMER/TUNER MODE CONTROL BLOCK
PAL NTSC
CG CS
CN402
CN302
PAL OSD
VIDEO OSD
FROM SYSTEM CONTROL BLOCK
SI BUS
S CLK
CG CS
CN803
CN603
FROM SYSTEM CONTROL BLOCK OSD MUTE
OSD MUTE
CN301
MOD V
To TUNER BLOCK
S601
NTSC 3.58
NTSC 4.43
ON PAL TV
NTSC PB
D6V
Q607 BUFFER
Q603 MUTING BUFFER
Q604 SWITCH
Q605 SWITCH
X601 17.7M
X602 14.3M
IC601 CHARACTER GENERATOR
5V
XTAL OSC
LC OSC
CHARACTER GENERATOR
CS
V SYNC
EXV SYNC
EXH SYNC
Q601, 602 BUFFER
CJ601 VIDEO LINE OUT
IC602 SYNC AFC
5V
V SEP
SYNC SEP
AFC
COUNT DOWN
LOCK DET
33fH VCO
X603 500k
EXV SYNC
V SYNC
H DET
COLOR SYS
CN603
CN803
Q303 SWITCH
AN 5V
FROM VIDEO BLOCK 1 COMP SYNC
IC601⑧ PAL REC/PB
2.2Vp-p
17MHz
IC601⑧ NTSC REC/PB
2Vp-p
14.4MHz
IC601⑨ PAL REC/PB
3.5Vp-p
17MHz
IC601⑨ NTSC REC/PB
3.8Vp-p
14.4MHz
IC601③ PAL
H
IC601③ PAL
H
IC601㉕ PAL
H
IC601㉕ PAL
H
IC602② PAL PB
2.1Vp-p
H
IC602② NTSC PB
2Vp-p
H
IC602⑩ PAL, NTSC REC/PB
0.7Vp-p
500kHz
IC602⑪ PAL REC/PB
1.6Vp-p
500kHz
IC602⑪ NTSC REC/PB
1.6Vp-p
500kHz
IC602⑨ PAL, NTSC REC/PB
4.3Vp-p
64 μ sec
05


(See page 4-21)
MA-202 BOARD (1/3)
IC305
VIDEO SW
TU
L1
IC301
CN302
TU V
V L1
CN803
CN402 (1/3)
CN903
45 (1/3)
4-22)
LINE 2
LINE 1
FROM SYSTEM CONTROL BLOCK
CN303
C.ROT
Q304-306
RF SWP
SKEW ON
PAL NTSC
CN304
VIDEO OUT
To/FROM VIDEO BLOCK 1
VIDEO IN
VIDEO SKEW IN
PAL OSD
VIDEO OSD
FROM SYSTEM CONTROL BLOCK
SI BUS
S CLK
CG CS
FROM SYSTEM CONTROL BLOCK
OSD MUTE
CN301
MOD V
To TUNER BLOCK
IO-51 BOARD (1/2)
(See page 4-47)
CN603
Q604 SWITCH
X601 17.7M
Q605 SWITCH
X602 14.3M
IC601 CHARACTER GENERATOR
5V
XTAL OSC
LC OSC
CHARACTER GENERATOR
Q607 BUFFER
Q603 MUTING BUFFER
CS
V SYNC
EXV SYNC
EXH SYNC
Q601, 602 BUFFER
CJ601 VIDEO LINE OUT
IC602 SYNC AFC
SYNC SEP
V SEP
AFC
COUNT DOWN
LOCK DET
33fH VCO
X603 500k
D6V
S601
NTSC 3.58
NTSC 4.43
ON PAL TV
NTSC PB
EXV SYNC
V SYNC
H DET
COLOR SYS
CN803
Q303 SWITCH
AN 5V
FROM VIDEO BLOCK 1 COMP SYNC
To SYSTEM CONTROL BLOCK
CN301
CN702
CN703
PT-97 BOARD (1/7)
(See page 4-26)
To MODE CONTROL BLOCK
IC601 ⑧ PAL REC/PB
2.2Vp-p
17MHz
IC601 ⑧ NTSC REC/PB
2Vp-p
14.4MHz
IC601 ⑨ PAL REC/PB
3.5Vp-p
17MHz
IC601 ⑨ NTSC REC/PB
3.8Vp-p
14.4MHz
IC601 ③ PAL REC
1.2Vp-p
IC601 ③ NTSC REC
2.1Vp-p
IC601 ③ PAL PB
2.2Vp-p
IC601 ③ NTSC PB
2Vp-p
IC601 ㉕ PAL REC
2Vp-p
IC601 ㉕ NTSC REC
2.1Vp-p
IC601 ㉕ PAL PB
2.1Vp-p
IC601 ㉕ NTSC PB
1.9Vp-p
H
IC602 ② PAL PB
2.1Vp-p
IC602 ② NTSC PB
2Vp-p
IC602 ⑩ PAL, NTSC REC/PB
0.7Vp-p
500kHz
IC602 ⑪ PAL REC/PB
1.6Vp-p
500kHz
IC602 ⑪ NTSC REC/PB
1.6Vp-p
500kHz
IC602 ⑨ PAL, NTSC REC/PB
4.3Vp-p
64 μ sec

SLV-736EE/836EE/K881/X731/X821/X831

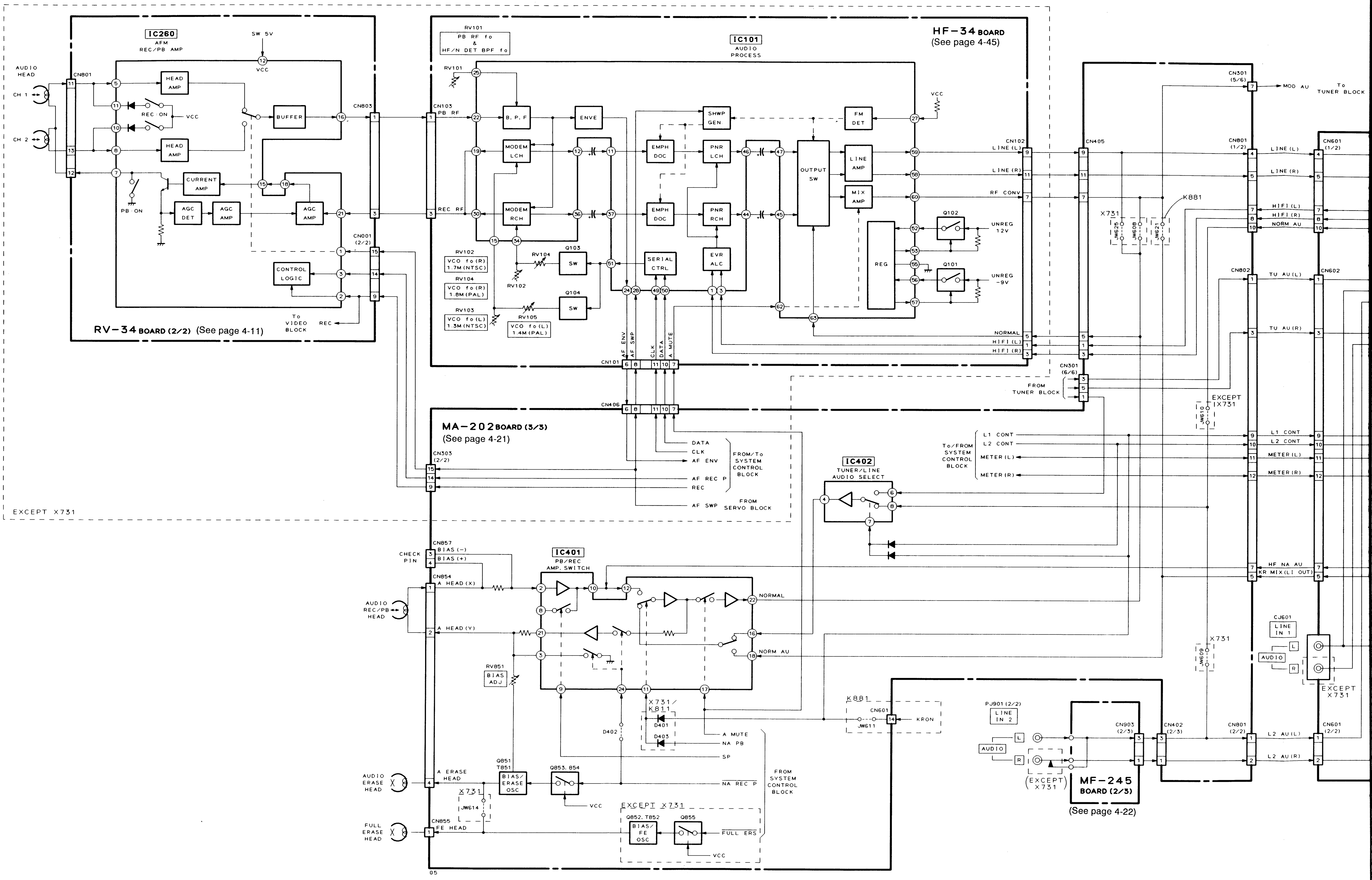
3-4. SERVO, SYSTEM CONTROL BLOCK DIAGRAM

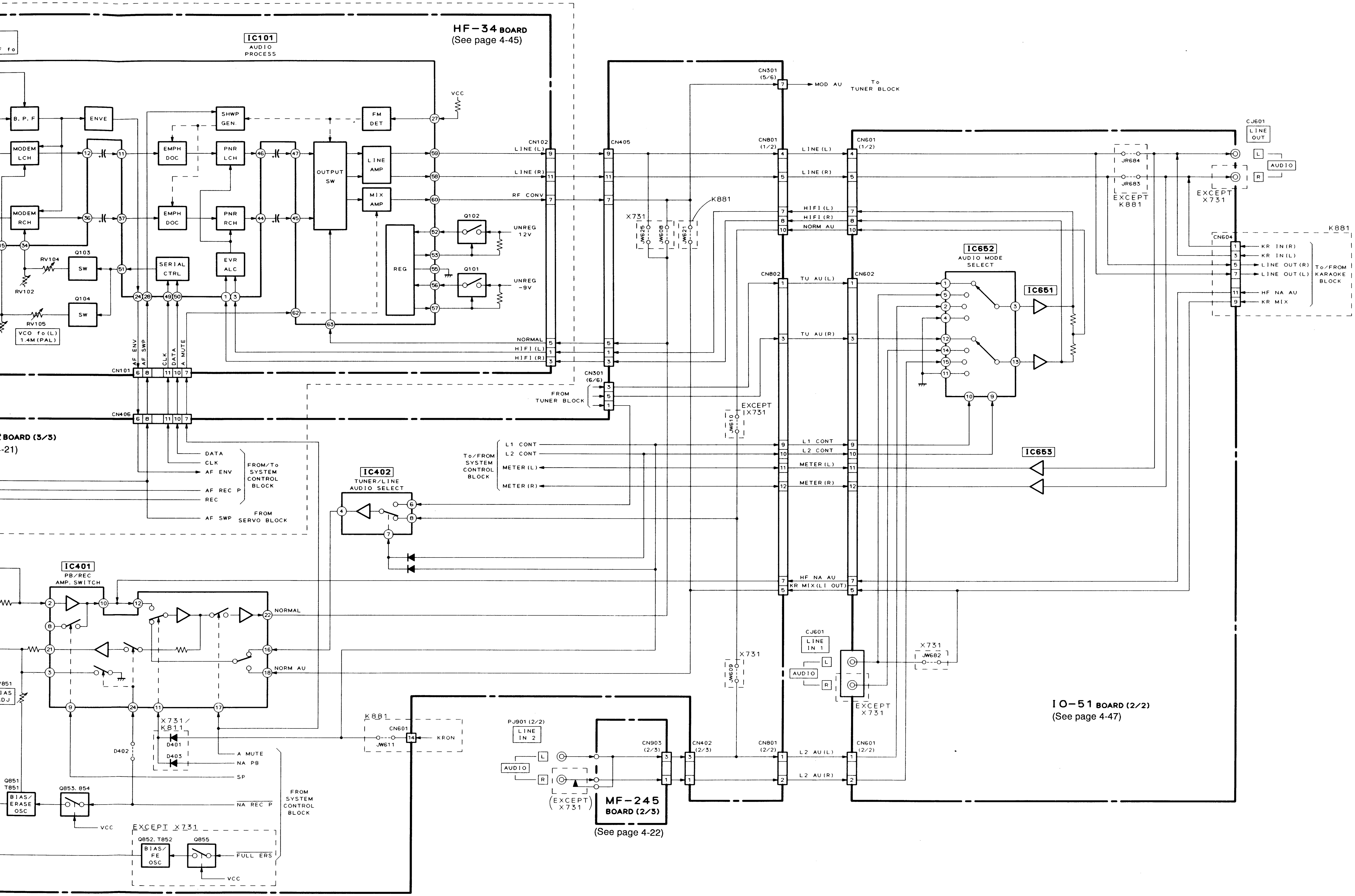

IC101 ㉑ PAL REC/PB
1.9Vp-p
25Hz
IC101 ㉑ NTSC REC/PB
1.8Vp-p
30Hz
MA-202 BOARD (2/3)
(See page 4-22)
IC101 ⑳ REC/PB PAL
2.52Vp-p
664 μsec
IC101 ⑳ REC/PB NTSC
2.52Vp-p
460 μsec
IC203 (68) REC/PB PAL
4.48Vp-p
40msec
IC203 (68) REC/PB NTSC
4.56Vp-p
33.4 msec
IC203 (69) RF/PB PAL
5.04Vp-p
6.68 msec
IC203 (69) RF/PB NTSC
5.04Vp-p
2.78 msec
IC203 ① REC/PB PAL
5.12Vp-p
40 msec
IC203 ① REC/PB NTSC
5.2Vp-p
33.4 msec
IC203 (100) REC/PB PAL
5.2Vp-p
40 msec
IC203 (100) REC/PB NTSC
5.28Vp-p
33.4 msec
IC203 ㊷ PAL, NTSC REC/PB
2.9Vp-p
12MHz
M901 DRUM MOTOR (1/2)
DRUM PG SENSOR
DRUM FG
M902 CAPSTAN MOTOR (1/2)
CAPSTAN FG SENSOR
IC101 (1/3) WAVE SHAPER
IC101 (2/3) CAPSTAN FG AMP
IC101 (3/3) CTL REC/PB AMP
IC203 (1/2) SERVO
RF SWP
AF SWP
To VIDEO BLOCK 1
To AUDIO BLOCK
RV202 RF SW POS
RV201 AF SW POS
IC202 (1/2) DRUM ERROR INTEGRATOR
IC202 (2/2) CAPSTAN ERROR INTEGRATOR
REC CTL GEN
TIMING GEN
3 VALUE DET REC CTL OPEN PB
PB CTL AMP
GCA
PB CTL AMP
LEVEL DET
PB CTL LOGIC
PEAK DET
RTG MMV
TIME CONST
FOR CHECK
CTL HEAD
CN101
M901 DRUM MOTOR (2/2)
IC1 (3/3) DRUM MOTOR DRIVE
CONTROL AMP1, 2
HALL AMP
DRIVER
TSD
ST/SP
V REG
IC1 (2/2)
M902 CAPSTAN MOTOR
HALL DRIVE
M902 CAPSTAN MOTOR (2/2)
CA-41 BOARD
M903 CAM MOTOR
CM-14 BOARD
M904 LOADING MOTOR
S1 CAM ENCODER
ROTARY SWITCH (CAM POSITION)
IC201 CAM/LOADING MOTOR DRIVE
MTR 12V
IC002 (1/2) WAVE SHAPER
IC002 (2/2) WAVE SHAPER
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
PH001 SUPPLY REEL FG
PH002 TAKE-UP REEL FG
X201 12MHz
D204
DIG 6V
Q201 LED DRIVE
D001 TOP/END LED
S001 CASSETE UP/DOWN
S002 REC PROOF
IC203 (2/2) SYSTEM CONTROL
IC101 ⑦ REC PAL
6Vp-p
40msec
IC101 ⑦ REC NTSC
6.32Vp-p
33.4 msec
IC203 (67) PB PAL
5.04Vp-p
40 msec
IC203 (67) PB NTSC
5.36Vp-p
33.4 msec
IC203 (77) REC/PB PAL
5.04Vp-p
40 msec
IC203 (77) REC/PB NTSC
5.28Vp-p
33.4 msec
IC203 ⑦ REC PAL
4.96Vp-p
40 msec
IC203 ⑦ REC NTSC
5.04Vp-p
33.4 msec
IC203 (70) REC/PB PAL
4.4Vp-p
660 μsec
IC203 (70) REC/PB NTSC
4.56Vp-p
460 μsec



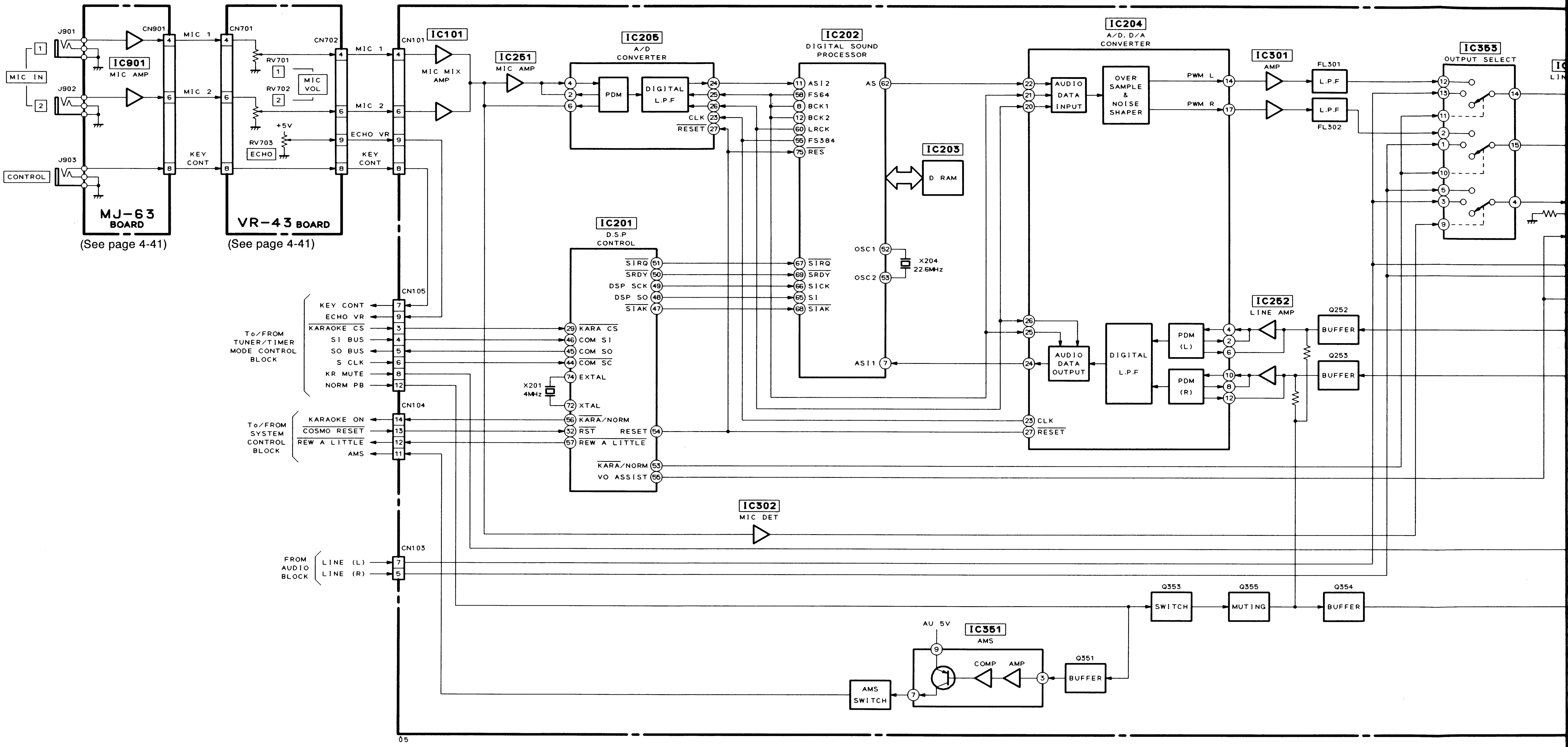
1.8Vp-p
IC203 (69) RF/PB PAL
5.04Vp-p
6.68 msec
IC203 (1) REC/PB PAL
5.12Vp-p
40 msec
IC203 (100) REC/PB PAL
5.2Vp-p
40 msec
IC203 (69) RF/PB NTSC
5.04Vp-p
2.78 msec
IC203 (1) REC/PB NTSC
5.2Vp-p
33.4 msec
IC203 (100) REC/PB NTSC
5.28Vp-p
33.4 msec
IC203 (42) PAL, NTSC REC/PB
2.9Vp-p
12MHz
CN304
RF SWP
To VIDEO BLOCK 1
AF SWP
To AUDIO BLOCK
RV202
RF SW POS
RV201
AF SW POS
IC202 (1/2)
DRUM ERROR INTEGRATOR
REF 2.5V
9V
IC202 (2/2)
CAPSTAN ERROR INTEGRATOR
CN201
CN002
CAP VS
D201
CAP RVS
LIMITER
MTR 12V
SW 5V
M901
DRUM MOTOR (2/2)
IC1 (3/3)
DRUM MOTOR DRIVE
CN004
D.VS
V REG
CONTROL AMP1, 2
HALL
HALL AMP
φ1 AMP
φ1 DRIVER
φ2 AMP
φ2 DRIVER
TSD
ST/SP
V REG
VCC
M901 DRUM MOTOR
IC1 (2/2)
M902 CAPSTAN MOTOR
VS
FRC
TL
VM
VCC
SW 5V
HALL DRIVE
U(+) U(-) V(+) V(-) W(+) W(-)
M902
CAPSTAN MOTOR (2/2)
CA-41 BOARD
M903 CAM MOTOR
CN006
CM-14 BOARD
M904 LOADING MOTOR
CN005
S1
CAM ENCODER
ROTARY SWITCH
CAM POSITION
CN003
D+5V
IC002 (1/2)
WAVE SHAPER
Q002 SUPPLY END SENSOR
Q001 TAKE-UP END SENSOR
S SENSO
T SENS
IC002 (2/2)
WAVE SHAPER
PH001 SUPPLY REEL FG
PH002 TAKE-UP REEL FG
S REEL
T REEL
X201 12MHz
XTAL
EXTAL
D204
DIG 6V
VDD
AV DD
AV REF
Q201 LED DRIVE
D001 TOP/END LED
END LED
S001 CASSETE UP/DOWN
UP
DOWN
C DOWN
S002 REC PROOF
CIN/REC PRE
IC201
CAM/LOADING MOTOR DRIVE
CAM(+) CAM(-) LOAD(+)
CAM CW/CCW LOAD
MTR 12V
CAM
CW/CCW
LOAD
MODE 1
MODE 2
MODE 3
MODE 4
IC203 (2/2)
SYSTEM CONTROL
REW A LITTLE
AMS
SO BUS
SI BUS
S CLK
COSMO CS
COSMO RST
MODE CONT
COSMO RST
To AUDIO BLOCK
S-CLK
SI BUS
To VIDEO BLOCK 1
3.58 NTSC
NTSC
NT JUDGE
V PB
E TAPE
ORC ON
QVD
QHD ENABLE
JOG
SECAM
ME SECAM
LP HEAD
RF ENV
REC P
HEAD CONT
ENV GAIN
X731
D354
JR619
EXCEPT X731
Q354
OSD MUTE SWITCH
OSD MUTE
OSD MUTE
COLOR SYS
V SYNC
SKEW ON
LINE 1
LINE 2
COLOR SYS
COMP SYNC
SKEW ON
LINE 1
LINE 2
To/FROM VIDEO BLOCK 2
LINE 1
LINE 2
CLK
DATA
AF ENV
AF REC P
REC
A MUTE
NA PB
NA REC P
FULL ERS
SP
METER (L)
METER (R)
To/FROM AUDIO BLOCK
IC303
SYNCHRONIZED SERIAL BUS PARALLEL
AN 5V
SO 1
SCK 1
TAIL MARK COUNTER
CLOCK GATE
ADDRESS SHIFT REGISTER
DATA SHIFT REGISTER
ADDRESS DECODER
OUTPUT LATCH REGISTER
DIVIDE
Q302
SW
K881
(See page 4-26)
To/FROM KARAOKE BLOCK
PT-97 BOARD (2/7)
SO BUS
SI BUS
S CLK
COSMO CS
COSMO RST
To/FROM TIMER/TUNER MODE CONTROL
CN302
MODE CONT
3.58 NTSC
To TUNER BLOCK
Q380
AN 5V
SWITCH
CN304
3.58MHz
NTSC
NT JUDGE
V PB
E TAPE
ORC ON
QVD
CLK
DATA
To/FROM VIDEO BLOCK 1
CN303
JOG
SECAM
ME SECAM
SP
RF ENV
REC P
HEAD CONT
ENV CONT
REC CUR
IC203 (47) REC/PB PAL
10msec/DIV
5.04Vp-p
IC203 (47) REC/PB NTSC
5.36Vp-p
V
IC203 (7) REC PAL
4.96Vp-p
40 msec
IC203 (70) REC/PB PAL
4.4Vp-p
660 μsec
IC203 (7) REC NTSC
5.04Vp-p
33.4 msec
IC203 (70) REC/PB NTSC
4.56Vp-p
460 μsec

3-5. AUDIO BLOCK DIAGRAM

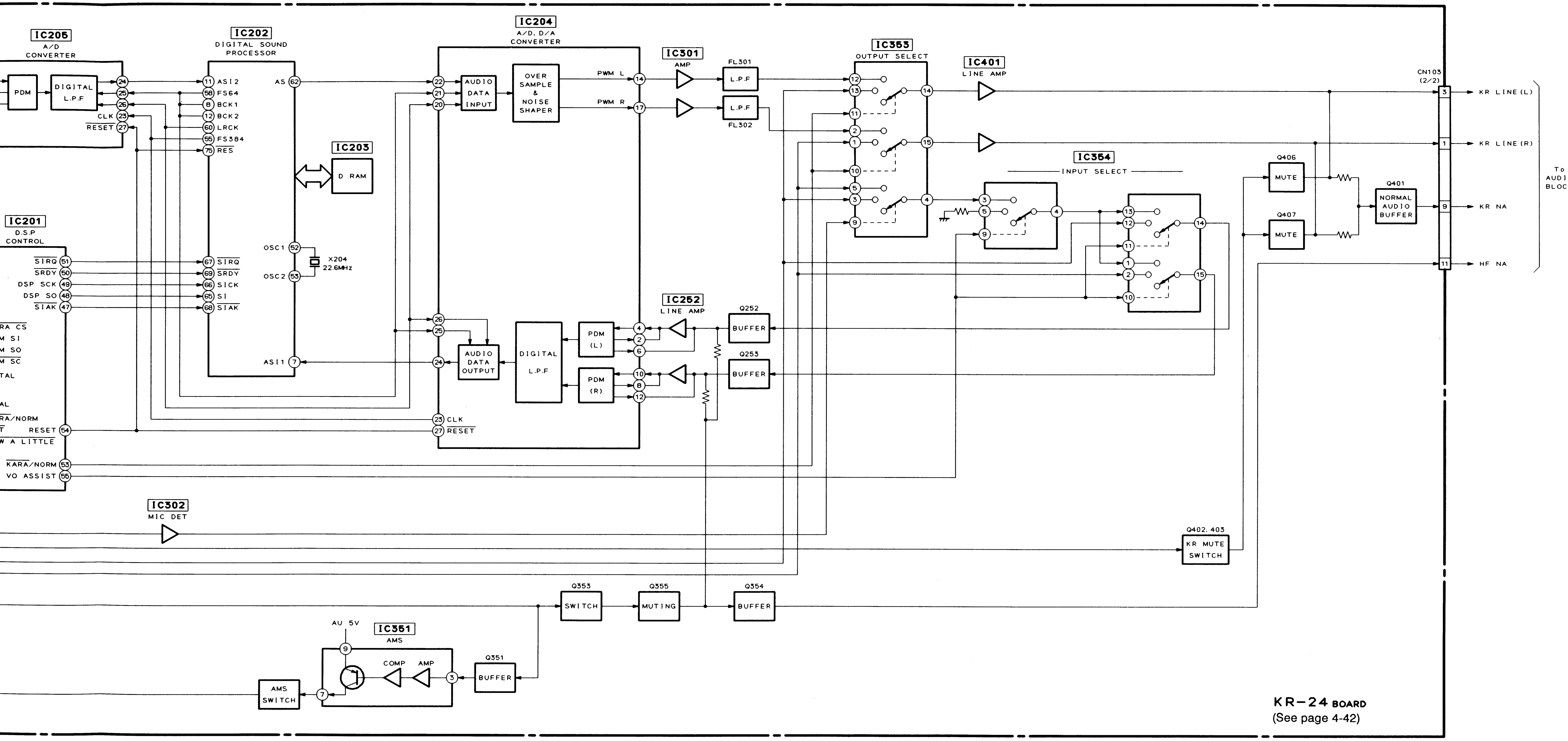

IC260
AFM REC/PB AMP
SW 5V
VCC
AUDIO HEAD
CH 1
CH 2
CN801
HEAD AMP
REC·ON
BUFFER
CURRENT AMP
AGC DET
AGC AMP
PB·ON
CN803
CN001 (2/2)
CONTROL LOGIC
To VIDEO BLOCK
REC
RV-34 BOARD (2/2) (See page 4-11)
RV101
PB RF fo & HF/N DET BPF fo
IC101
AUDIO PROCESS
HF-34 BOARD (See page 4-45)
CN103
PB RF
REC RF
B. P. F
ENVE
SHWP GEN
FM DET
MODEM LCH
MODEM RCH
EMPH DOC
PNR LCH
PNR RCH
OUTPUT SW
LINE AMP
MIX AMP
SERIAL CTRL
EVR ALC
REG
Q101
Q102
Q103
Q104
SW
RV102
VCO fo(R) 1.7M(NTSC)
RV104
VCO fo(R) 1.8M(PAL)
RV103
VCO fo(L) 1.3M(NTSC)
RV105
VCO fo(L) 1.4M(PAL)
UNREG 12V
UNREG -9V
CN102
LINE(L)
LINE(R)
RF CONV
NORMAL
HIFI(L)
HIFI(R)
AF ENV
AF SWP
CLK
DATA
A MUTE
CN101
CN406
CN405
CN301 (5/6)
MOD AU
To TUNER BLOCK
CN801 (1/2)
CN601 (1/2)
LINE(L)
LINE(R)
HIFI(L)
HIFI(R)
NORM AU
X731
JW625
JW608
JW621
K881
CN802
CN602
TU AU(L)
TU AU(R)
CN301 (6/6)
FROM TUNER BLOCK
EXCEPT X731
JW610
MA-202 BOARD (3/3) (See page 4-21)
CN303 (2/2)
DATA
CLK
AF ENV
AF REC P
REC
AF SWP
FROM/To SYSTEM CONTROL BLOCK
FROM SERVO BLOCK
EXCEPT X731
To/FROM SYSTEM CONTROL BLOCK
L1 CONT
L2 CONT
METER(L)
METER(R)
IC402
TUNER/LINE AUDIO SELECT
HF NA AU
KR MIX(L1 OUT)
CN857
CHECK PIN
BIAS(-)
BIAS(+)
CN854
A HEAD(X)
A HEAD(Y)
AUDIO REC/PB HEAD
IC401
PB/REC AMP. SWITCH
NORMAL
NORM AU
RV851
BIAS ADJ
X731/K811
D401
D402
D403
A MUTE
NA PB
SP
FROM SYSTEM CONTROL BLOCK
A ERASE HEAD
AUDIO ERASE HEAD
Q851, T851
BIAS/ERASE OSC
Q853, 854
VCC
NA REC P
X731
JW614
CN855
FE HEAD
FULL ERASE HEAD
EXCEPT X731
Q852, T852
BIAS/FE OSC
Q855
FULL ERS
K881
CN601
JW611
KRON
CJ601
LINE IN 1
AUDIO
L
R
EXCEPT X731
X731
JW609
PJ901 (2/2)
LINE IN 2
(EXCEPT X731)
MF-245 BOARD (2/3) (See page 4-22)
CN903 (2/3)
CN402 (2/3)
CN801 (2/2)
CN601 (2/2)
L2 AU(L)
L2 AU(R)
05


HF-34 BOARD
(See page 4-45)
IC101
AUDIO PROCESS
B. P. F
ENVE
SHWP GEN.
FM DET
MODEM LCH
MODEM RCH
EMPH DOC
PNR LCH
PNR RCH
OUTPUT SW
LINE AMP
MIX AMP
REG
Q102
UNREG 12V
Q101
UNREG -9V
Q103
Q104
SW
RV104
RV102
RV105
VCO fo(L) 1.4M(PAL)
SERIAL CTRL.
EVR ALC
VCC
AF ENV
AF SWP
CLK
DATA
A MUTE
CN101
CN102
LINE (L)
LINE (R)
RF CONV
NORMAL
HIFI (L)
HIFI (R)
CN405
CN406
BOARD (3/3)
-21)
DATA
CLK
AF ENV
AF REC P
REC
AF SWP
FROM/To SYSTEM CONTROL BLOCK
FROM SERVO BLOCK
CN301 (6/6)
FROM TUNER BLOCK
CN301 (5/6)
MOD AU
To TUNER BLOCK
X731
JW625
JW608
JW621
K881
EXCEPT X731
JW610
JW609
IC402
TUNER/LINE AUDIO SELECT
To/FROM SYSTEM CONTROL BLOCK
L1 CONT
L2 CONT
METER (L)
METER (R)
IC401
PB/REC AMP. SWITCH
NORMAL
NORM AU
X731/K811
D401
D402
D403
A MUTE
NA PB
SP
NA REC P
FROM SYSTEM CONTROL BLOCK
Q851 T851
BIAS/ERASE OSC
Q853, 854
VCC
EXCEPT X731
Q852, T852
BIAS/FE OSC
Q855
FULL ERS
K881
CN601
JW611
KRON
CN801 (1/2)
CN802
CN601 (1/2)
CN602
LINE (L)
LINE (R)
HIFI (L)
HIFI (R)
NORM AU
TU AU (L)
TU AU (R)
L1 CONT
L2 CONT
METER (L)
METER (R)
HF NA AU
KR MIX (L1 OUT)
CJ601
LINE OUT
AUDIO
L
R
JR684
JR683
EXCEPT K881
EXCEPT X731
K881
CN604
KR IN (R)
KR IN (L)
LINE OUT (R)
LINE OUT (L)
HF NA AU
KR MIX
To/FROM KARAOKE BLOCK
IC652
AUDIO MODE SELECT
IC651
IC653
CJ601
LINE IN 1
AUDIO
X731
JW682
EXCEPT X731
IO-51 BOARD (2/2)
(See page 4-47)
PJ901 (2/2)
LINE IN 2
AUDIO
(EXCEPT X731)
MF-245 BOARD (2/3)
(See page 4-22)
CN903 (2/3)
CN402 (2/3)
CN801 (2/2)
CN601 (2/2)
L2 AU (L)
L2 AU (R)

3-6. KARAOKE BLOCK DIAGRAM (SLV-K881)

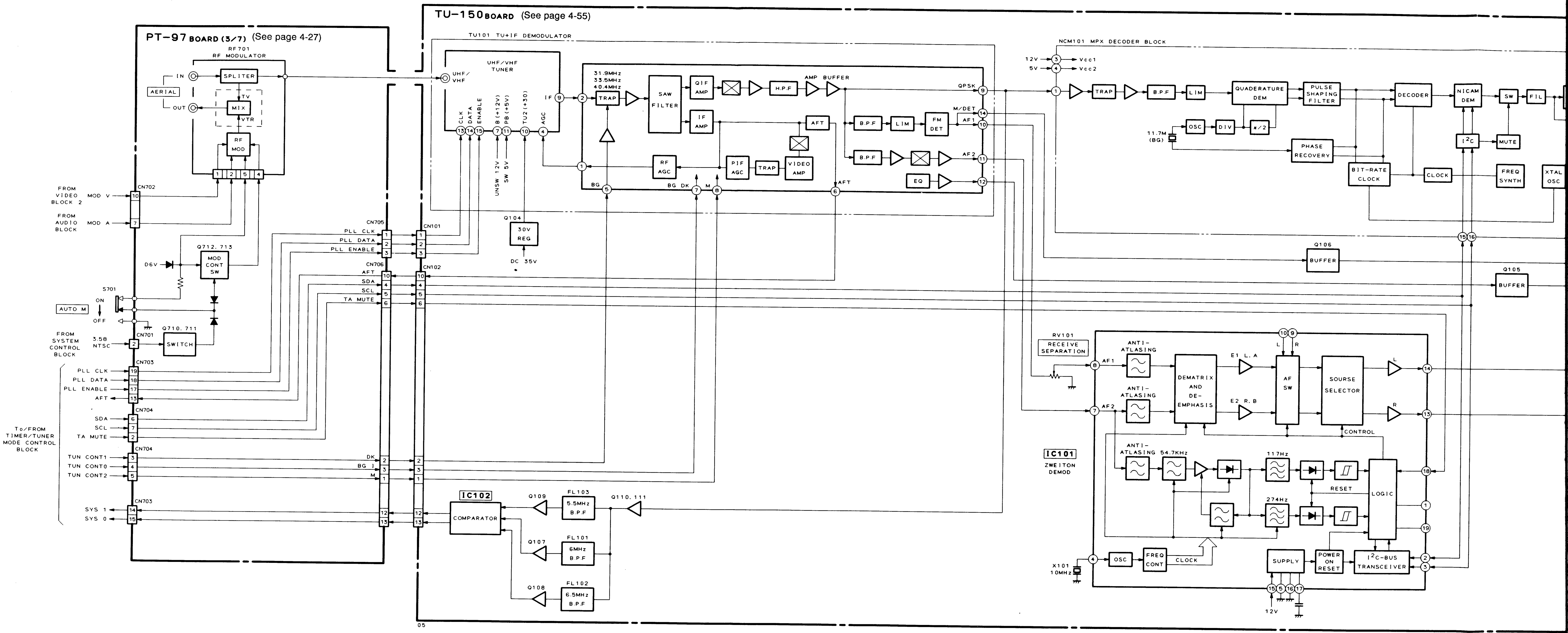

J901
1
MIC IN
2
J902
J903
CONTROL
CN901
IC901
MIC AMP
MJ-63
BOARD
MIC 1
MIC 2
KEY CONT
CN701
RV701
1
RV702
2
MIC VOL
+5V
RV703
ECHO
CN702
VR-43 BOARD
MIC 1
MIC 2
ECHO VR
KEY CONT
CN101
IC101
MIC MIX AMP
IC251
MIC AMP
IC205
A/D CONVERTER
PDM
DIGITAL L.P.F
CLK
RESET
IC202
DIGITAL SOUND PROCESSOR
AS12
FS64
BCK1
BCK2
LRCK
FS384
RES
AS
IC203
D RAM
OSC1
OSC2
X204
22.6MHz
AS11
IC204
A/D, D/A CONVERTER
AUDIO DATA INPUT
OVER SAMPLE & NOISE SHAPER
PWM L
PWM R
AUDIO DATA OUTPUT
DIGITAL L.P.F
PDM (L)
PDM (R)
CLK
RESET
IC301
AMP
FL301
L.P.F
FL302
IC252
LINE AMP
Q252
BUFFER
Q253
BUFFER
IC353
OUTPUT SELECT
IC201
D.S.P CONTROL
SIRQ
SRDY
DSP SCK
DSP SO
SIAK
SIRQ
SRDY
SICK
SI
SIAK
KARA CS
COM SI
COM SO
COM SC
EXTAL
X201
4MHz
XTAL
KARA/NORM
RST
RESET
REW A LITTLE
KARA/NORM
VO ASSIST
CN105
KEY CONT
ECHO VR
KARAOKE CS
SI BUS
SO BUS
S CLK
KR MUTE
NORM PB
To/FROM TUNER/TIMER MODE CONTROL BLOCK
CN104
KARAOKE ON
COSMO RESET
REW A LITTLE
AMS
To/FROM SYSTEM CONTROL BLOCK
IC302
MIC DET
CN103
FROM AUDIO BLOCK
LINE (L)
LINE (R)
Q353
SWITCH
Q355
MUTING
Q354
BUFFER
AU 5V
IC351
AMS
COMP
AMP
Q351
BUFFER
AMS SWITCH
05

(See page 4-41)
(See page 4-41)

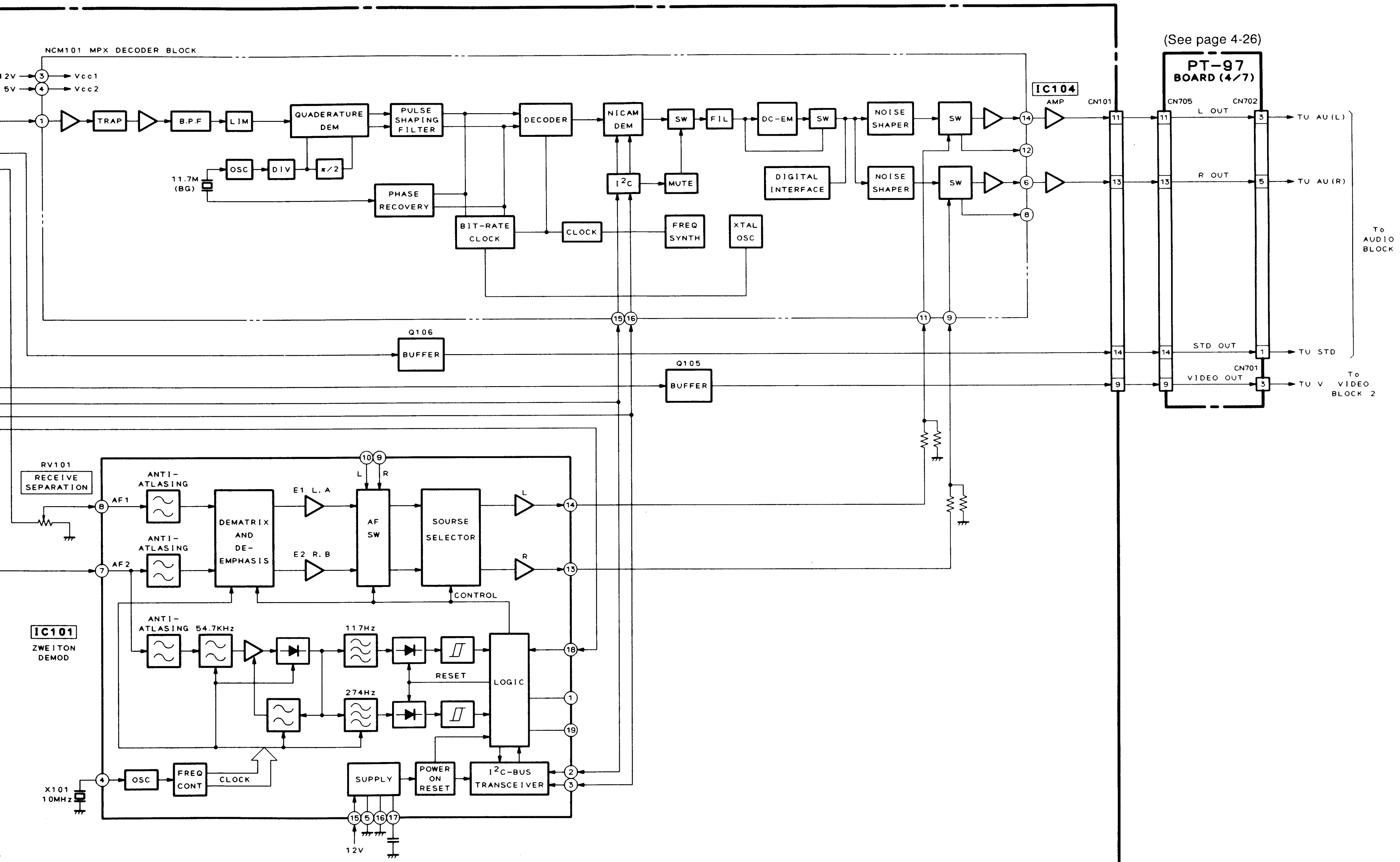

IC205
A/D CONVERTER
PDM
DIGITAL L.P.F
CLK
RESET
IC202
DIGITAL SOUND PROCESSOR
ASI2
FS64
BCK1
BCK2
LRCK
FS384
RES
AS
IC203
D RAM
OSC1
OSC2
X204 22.6MHz
SIRQ
SRDY
SICK
SI
SIAK
ASI1
IC201
D.S.P CONTROL
SIRQ
SRDY
DSP SCK
DSP SO
SIAK
RA CS
M SI
M SO
M SC
TAL
AL
RA/NORM
T RESET
W A LITTLE
KARA/NORM
VO ASSIST
IC204
A/D, D/A CONVERTER
AUDIO DATA INPUT
OVER SAMPLE & NOISE SHAPER
PWM L
PWM R
AUDIO DATA OUTPUT
DIGITAL L.P.F
PDM (L)
PDM (R)
CLK
RESET
IC301
AMP
FL301
L.P.F
FL302
IC252
LINE AMP
Q252
BUFFER
Q253
BUFFER
IC353
OUTPUT SELECT
IC401
LINE AMP
IC354
INPUT SELECT
Q406
MUTE
Q407
MUTE
Q401
NORMAL AUDIO BUFFER
CN103 (2/2)
KR LINE(L)
KR LINE(R)
KR NA
HF NA
To AUDIO BLOCK
IC302
MIC DET
Q402, 403
KR MUTE SWITCH
Q353
SWITCH
Q355
MUTING
Q354
BUFFER
AU 5V
IC351
AMS
COMP
AMP
Q351
BUFFER
AMS SWITCH
KR-24 BOARD
(See page 4-42)

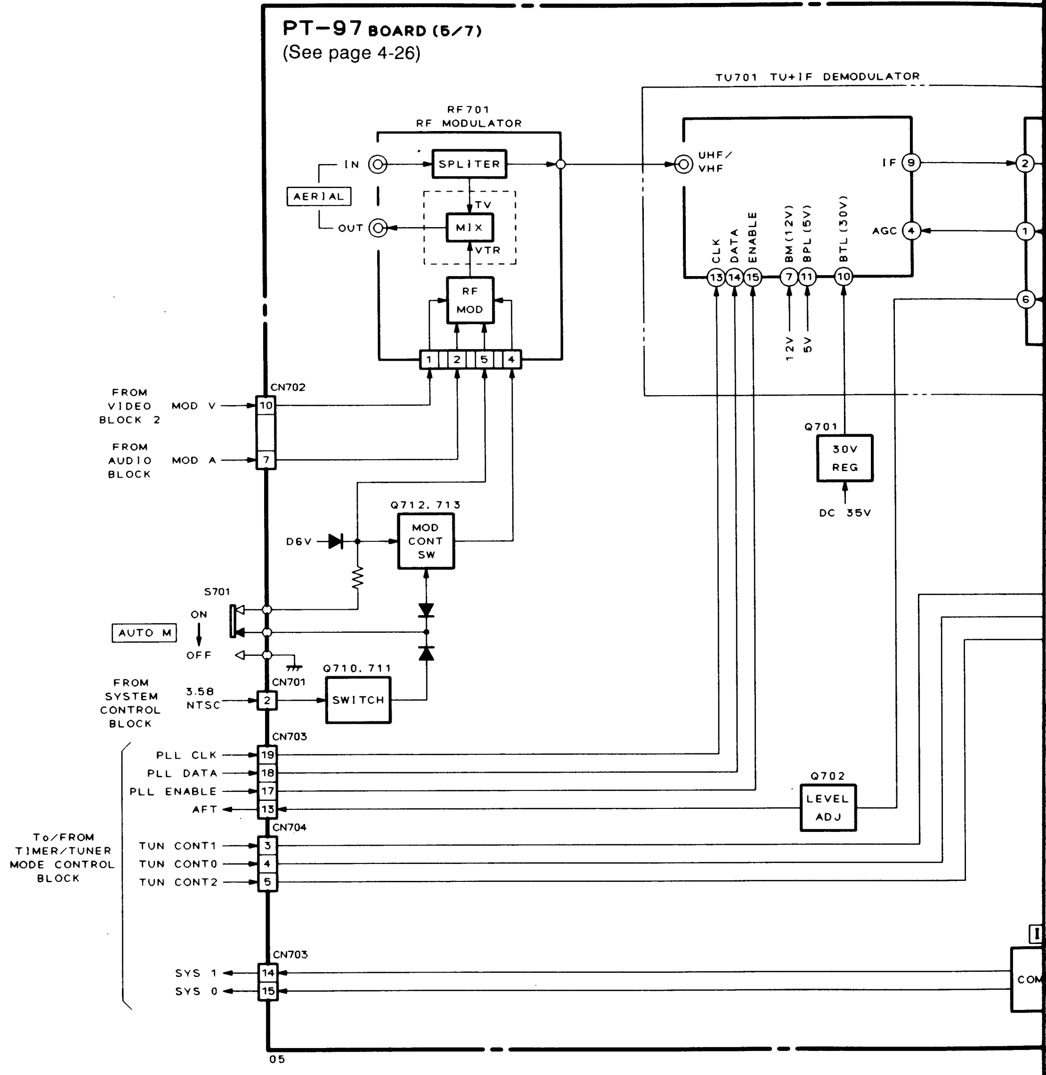
3-7. TUNER BLOCK DIAGRAM

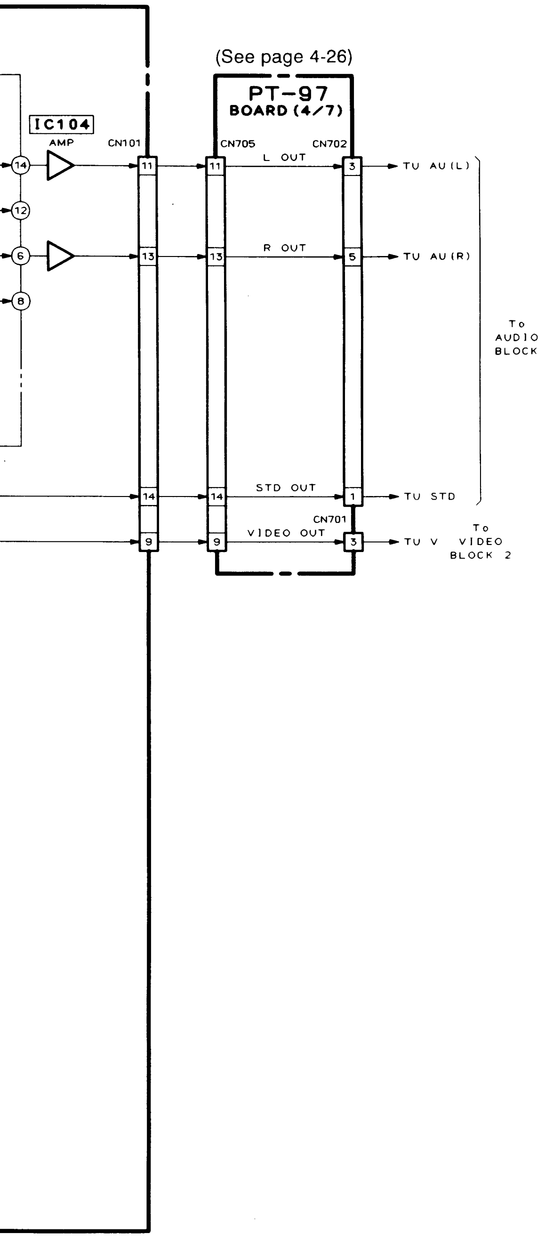
- **SLV-836EE/K881/X831**


PT-97 BOARD (3/7) (See page 4-27)
RF701
RF MODULATOR
IN
OUT
AERIAL
SPLITER
TV
MIX
VTR
RF MOD
1
2
5
4
CN702
FROM VIDEO BLOCK 2
MOD V
10
FROM AUDIO BLOCK
MOD A
7
Q712, 713
MOD CONT SW
D6V
S701
ON
AUTO M
OFF
Q710, 711
SWITCH
CN701
FROM SYSTEM CONTROL BLOCK
3.58 NTSC
2
CN703
PLL CLK
PLL DATA
PLL ENABLE
AFT
19
18
17
13
CN704
SDA
SCL
TA MUTE
6
7
2
To/FROM TIMER/TUNER MODE CONTROL BLOCK
CN704
TUN CONT1
TUN CONT0
TUN CONT2
3
4
5
CN703
SYS 1
SYS 0
14
15
CN705
PLL CLK
PLL DATA
PLL ENABLE
CN706
AFT
SDA
SCL
TA MUTE
DK
BG
M
12
13
CN101
CN102
TU-150 BOARD (See page 4-55)
TU101 TU+IF DEMODULATOR
UHF/VHF TUNER
UHF/ VHF
CLK
DATA
ENABLE
B(+12V)
PB(+5V)
TU2(+30)
AGC
IF
UNSW 12V
SW 5V
Q104
30V REG
DC 35V
31.9MHz
33.5MHz
40.4MHz
TRAP
SAW FILTER
QIF AMP
H.P.F
AMP BUFFER
IF AMP
AFT
RF AGC
PIF AGC
TRAP
VIDEO AMP
B.P.F
LIM
FM DET
B.P.F
EQ
QPSK
M/DET
AF1
AF2
BG
BG DK
M
AFT
IC102
COMPARATOR
Q109
FL103
5.5MHz B.P.F
Q110, 111
Q107
FL101
6MHz B.P.F
Q108
FL102
6.5MHz B.P.F
05
NCM101 MPX DECODER BLOCK
12V
5V
Vcc1
Vcc2
TRAP
B.P.F
LIM
QUADERATURE DEM
PULSE SHAPING FILTER
DECODER
NICAM DEM
SW
FIL
11.7M (BG)
OSC
DIV
π/2
PHASE RECOVERY
BIT-RATE CLOCK
CLOCK
I²C
MUTE
FREQ SYNTH
XTAL OSC
Q106
BUFFER
Q105
BUFFER
RV101
RECEIVE SEPARATION
AF1
AF2
ANTI-ATLASING
ANTI-ATLASING
DEMATRIX AND DE-EMPHASIS
E1 L. A
E2 R. B
L
R
AF SW
SOURSE SELECTOR
CONTROL
L
R
IC101
ZWEITON DEMOD
ANTI-ATLASING
54.7KHz
117Hz
274Hz
RESET
LOGIC
X101 10MHz
OSC
FREQ CONT
CLOCK
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
12V

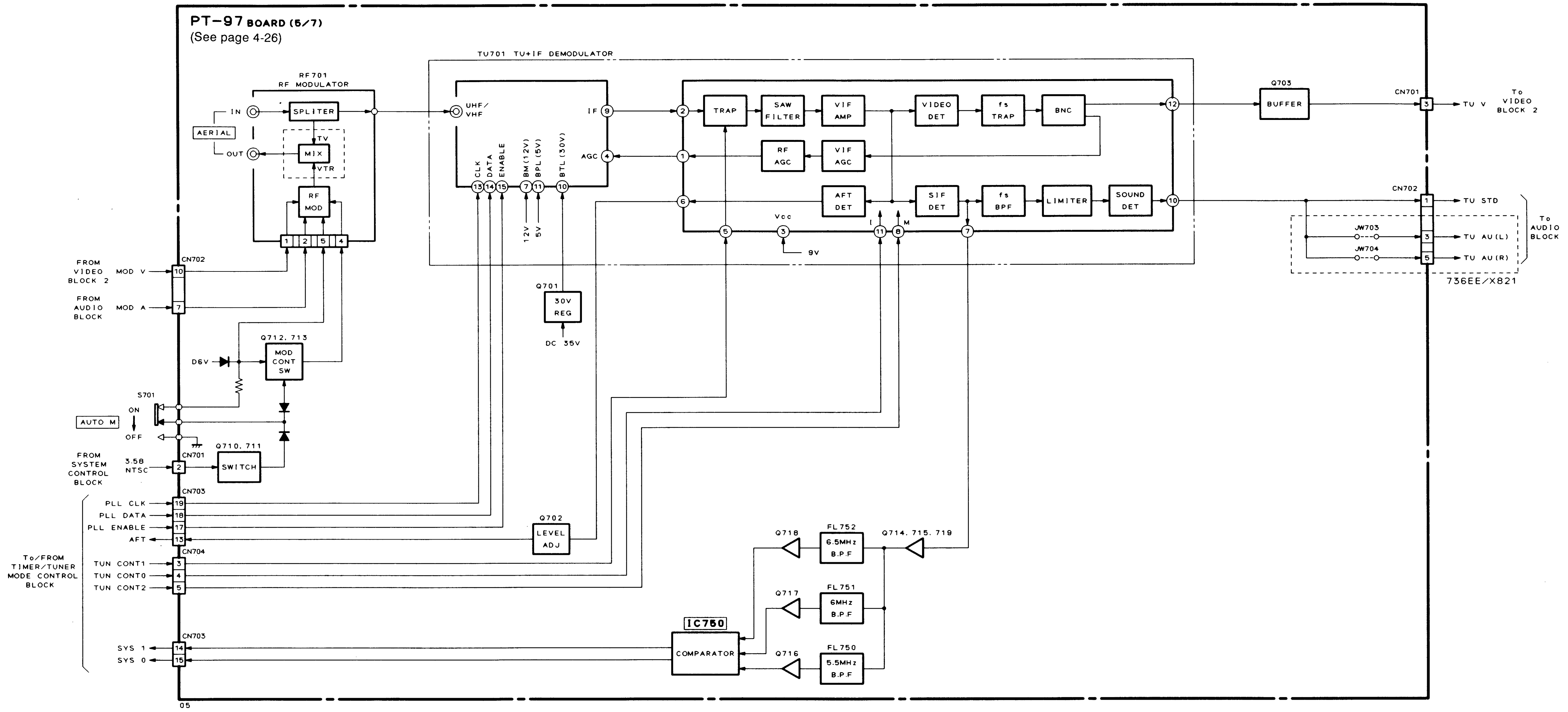
- **SLV-736EE/X731/X821**


NCM101 MPX DECODER BLOCK
12V
5V
Vcc1
Vcc2
TRAP
B.P.F
LIM
QUADERATURE DEM
PULSE SHAPING FILTER
π/2
OSC
DIV
11.7M (BG)
PHASE RECOVERY
DECODER
BIT-RATE CLOCK
CLOCK
NICAM DEM
I²C
MUTE
FREQ SYNTH
SW
FIL
DC-EM
DIGITAL INTERFACE
XTAL OSC
NOISE SHAPER
IC104
AMP
CN101
Q106
BUFFER
Q105
BUFFER
(See page 4-26)
PT-97 BOARD (4/7)
CN705
CN702
L OUT
R OUT
STD OUT
CN701
VIDEO OUT
TU AU(L)
TU AU(R)
To AUDIO BLOCK
TU STD
TU V
To VIDEO BLOCK 2
RV101 RECEIVE SEPARATION
AF1
AF2
ANTI-ATLASING
DEMATRIX AND DE-EMPHASIS
E1 L.A
E2 R.B
L
R
AF SW
SOURSE SELECTOR
CONTROL
IC101
ZWEITON DEMOD
54.7KHz
117Hz
274Hz
RESET
LOGIC
X101 10MHz
OSC
FREQ CONT
CLOCK
SUPPLY
POWER ON RESET
I²C-BUS TRANSCEIVER
12V

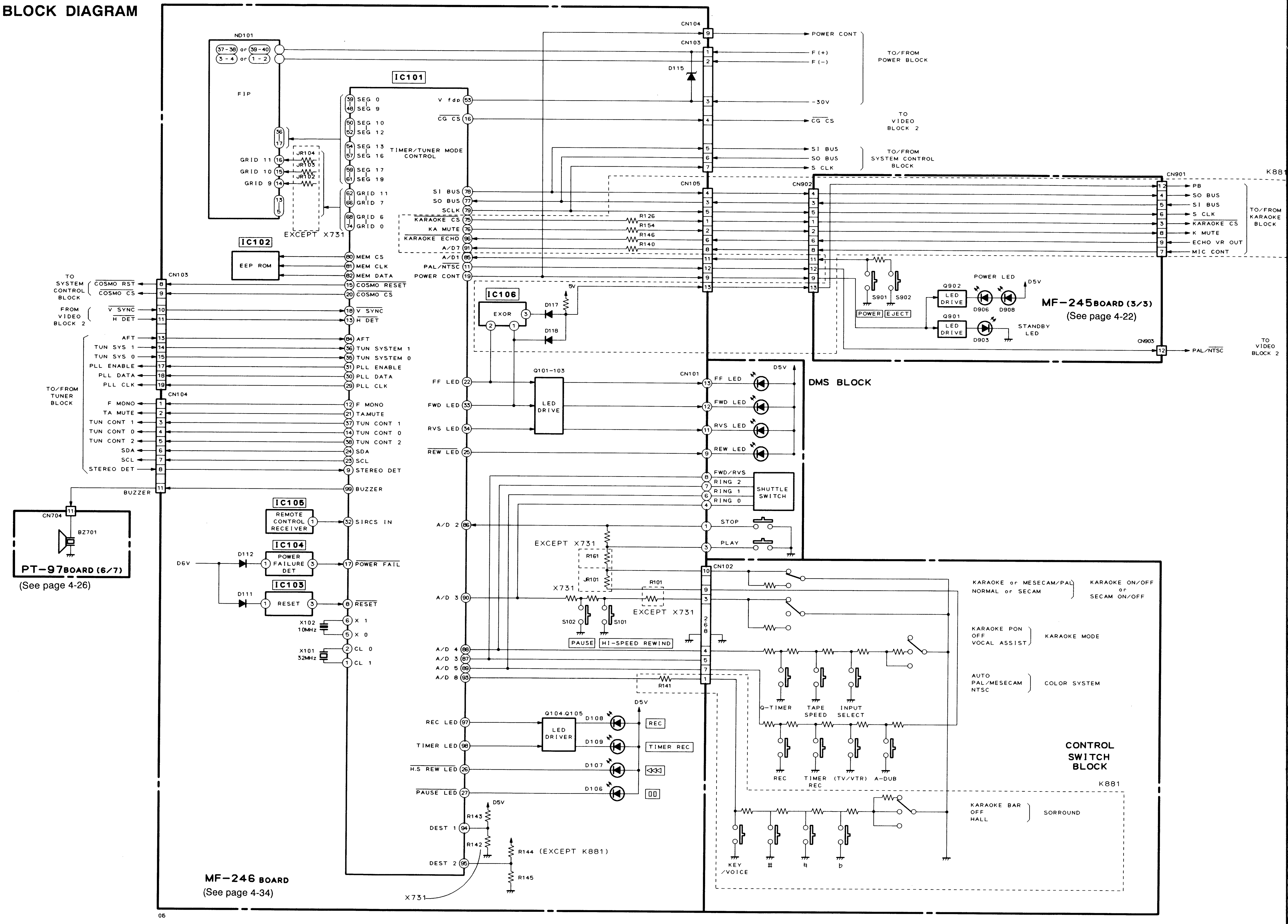

PT-97 BOARD (5/7)
(See page 4-26)
RF701 RF MODULATOR
AERIAL
IN
OUT
SPLITER
TV
MIX
VTR
RF MOD
TU701 TU+IF DEMODULATOR
UHF/VHF
IF
AGC
CLK
DATA
ENABLE
BM (12V)
BPL (5V)
BTL (30V)
12V
5V
Q701
30V REG
DC 35V
CN702
FROM VIDEO BLOCK 2
MOD V
FROM AUDIO BLOCK
MOD A
Q712, 713
MOD CONT SW
D5V
S701
AUTO M
ON
OFF
Q710, 711
SWITCH
CN701
FROM SYSTEM CONTROL BLOCK
3.58 NTSC
CN703
PLL CLK
PLL DATA
PLL ENABLE
AFT
Q702
LEVEL ADJ
CN704
To/FROM TIMER/TUNER MODE CONTROL BLOCK
TUN CONT1
TUN CONT0
TUN CONT2
CN703
SYS 1
SYS 0
05

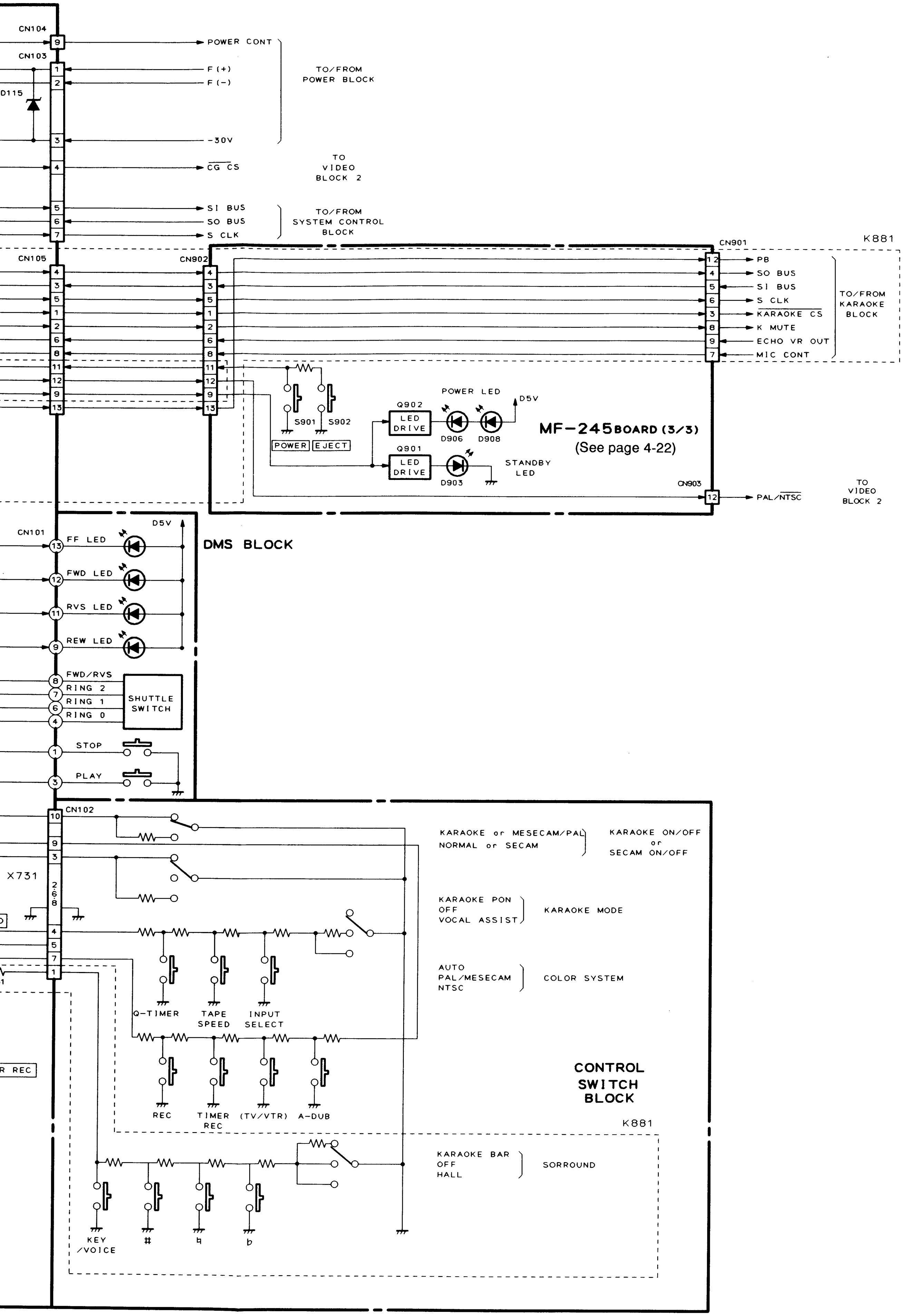

(See page 4-26)
PT-97
BOARD (4/7)
IC104
AMP
CN101
CN705
CN702
L OUT
R OUT
STD OUT
CN701
VIDEO OUT
TU AU(L)
TU AU(R)
TU STD
TU V
To AUDIO BLOCK
To VIDEO BLOCK 2

● SLV-736EE/X731/X821

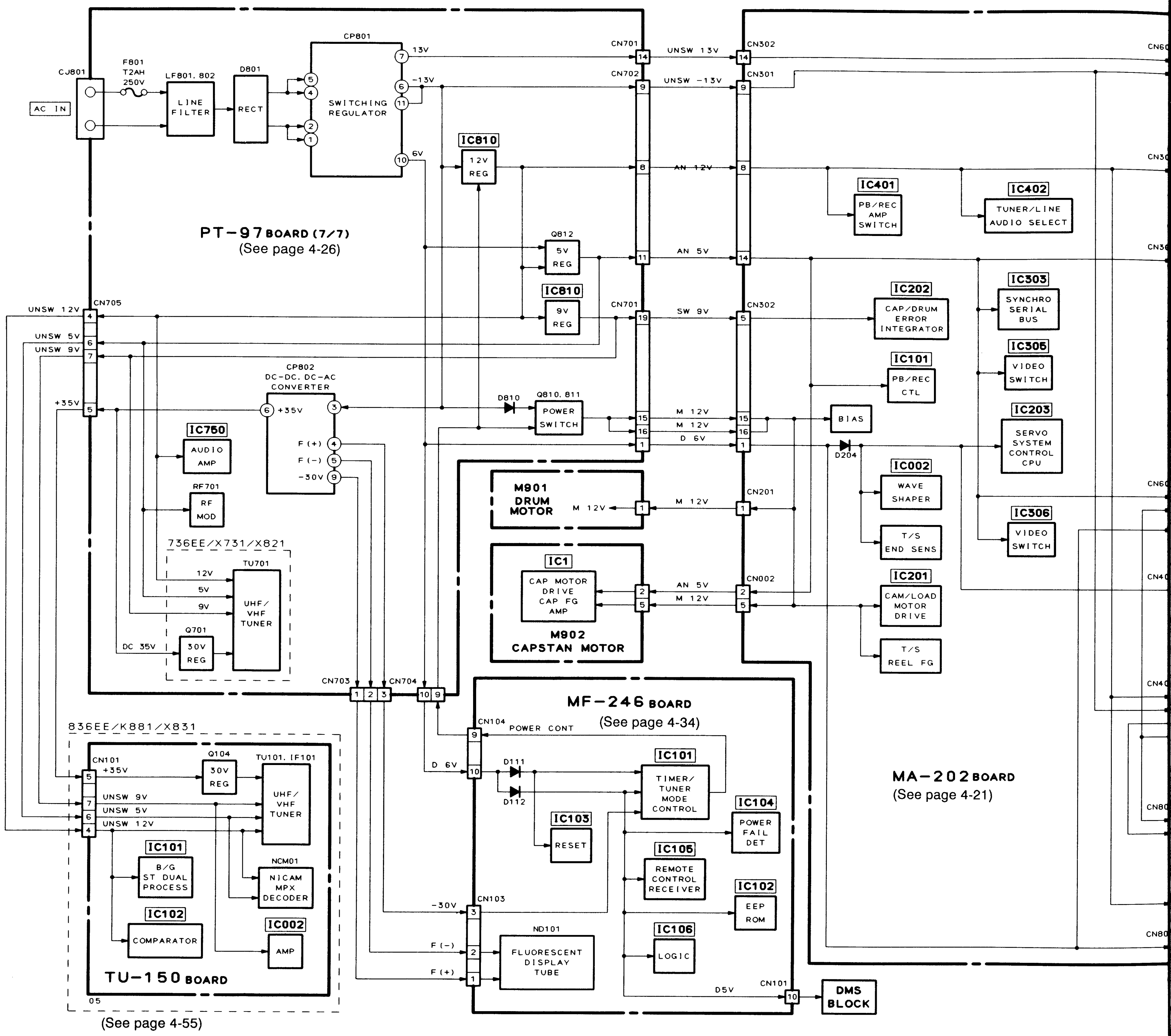

PT-97 BOARD (5/7)
(See page 4-26)
RF701
RF MODULATOR
IN
AERIAL
OUT
SPLITER
TV
MIX
VTR
RF MOD
TU701 TU+IF DEMODULATOR
UHF/VHF
CLK
DATA
ENABLE
BM(12V)
BPL(5V)
BTL(30V)
12V
5V
IF
AGC
TRAP
SAW FILTER
VIF AMP
VIDEO DET
fs TRAP
BNC
RF AGC
VIF AGC
AFT DET
SIF DET
fs BPF
LIMITER
SOUND DET
Vcc
9V
Q703
BUFFER
CN701
TU V
To VIDEO BLOCK 2
CN702
TU STD
JW703
JW704
TU AU(L)
TU AU(R)
To AUDIO BLOCK
736EE/X821
Q701
30V REG
DC 35V
FROM VIDEO BLOCK 2
MOD V
FROM AUDIO BLOCK
MOD A
D6V
Q712, 713
MOD CONT SW
S701
AUTO M
ON
OFF
Q710, 711
SWITCH
FROM SYSTEM CONTROL BLOCK
3.58 NTSC
CN703
PLL CLK
PLL DATA
PLL ENABLE
AFT
Q702
LEVEL ADJ
CN704
To/FROM TIMER/TUNER MODE CONTROL BLOCK
TUN CONT1
TUN CONT0
TUN CONT2
SYS 1
SYS 0
IC750
COMPARATOR
Q718
Q717
Q716
FL752
6.5MHz B.P.F
FL751
6MHz B.P.F
FL750
5.5MHz B.P.F
Q714, 715, 719
05

3-8. MODE CONTROL BLOCK DIAGRAM

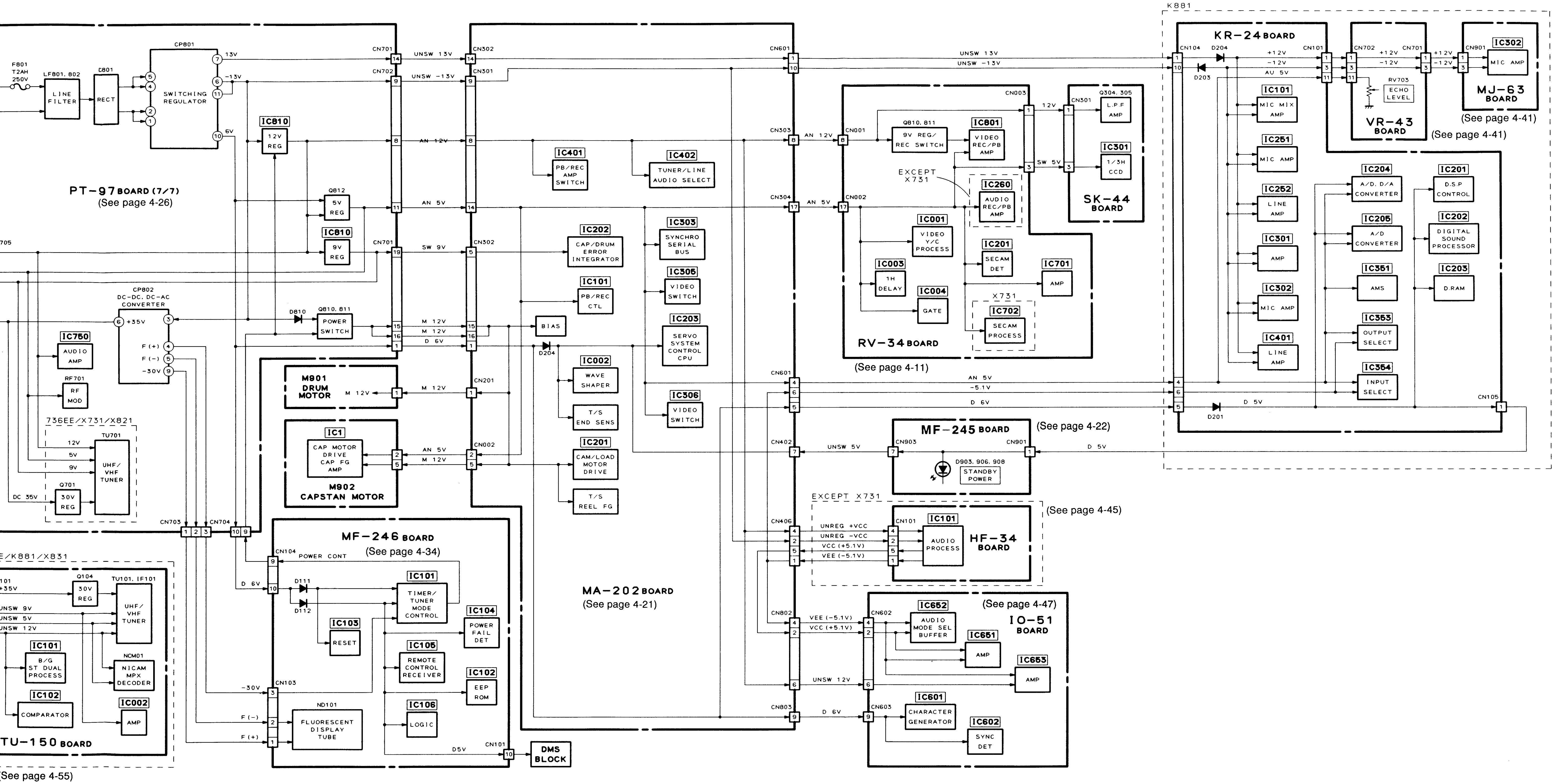

ND101
FIP
IC101
TIMER/TUNER MODE CONTROL
IC102
EEP ROM
IC106
EXOR
IC105
REMOTE CONTROL RECEIVER
IC104
POWER FAILURE DET
IC103
RESET
CN104
CN103
CN105
CN101
CN102
CN902
CN901
CN903
CN704
POWER CONT
F (+)
F (−)
−30V
TO/FROM POWER BLOCK
CG CS
TO VIDEO BLOCK 2
SI BUS
SO BUS
S CLK
TO/FROM SYSTEM CONTROL BLOCK
PB
KARAOKE CS
K MUTE
ECHO VR OUT
MIC CONT
TO/FROM KARAOKE BLOCK
PAL/NTSC
TO VIDEO BLOCK 2
K881
MF-245 BOARD (3/3)
(See page 4-22)
POWER LED
STANDBY LED
LED DRIVE
POWER
EJECT
S901
S902
D906
D908
D903
Q902
Q901
DMS BLOCK
FF LED
FWD LED
RVS LED
REW LED
FWD/RVS
RING 2
RING 1
RING 0
SHUTTLE SWITCH
STOP
PLAY
Q101-103
LED DRIVE
EXCEPT X731
R161
JR101
R101
X731
S102
S101
PAUSE
HI-SPEED REWIND
R141
Q104,Q105
LED DRIVER
REC LED
TIMER LED
H.S REW LED
PAUSE LED
D108
D109
D107
D106
REC
TIMER REC
DEST 1
DEST 2
R143
R142
R144 (EXCEPT K881)
R145
D5V
X731
MF-246 BOARD
(See page 4-34)
TO SYSTEM CONTROL BLOCK
COSMO RST
COSMO CS
FROM VIDEO BLOCK 2
V SYNC
H DET
TO/FROM TUNER BLOCK
AFT
TUN SYS 1
TUN SYS 0
PLL ENABLE
PLL DATA
PLL CLK
F MONO
TA MUTE
TUN CONT 1
TUN CONT 0
TUN CONT 2
SDA
SCL
STEREO DET
BUZZER
BZ701
PT-97 BOARD (6/7)
(See page 4-26)
D6V
D112
D111
X102 10MHz
X101 32MHz
SIRCS IN
POWER FAIL
RESET
MEM CS
MEM CLK
MEM DATA
COSMO RESET
A/D 1
A/D 2
A/D 3
A/D 4
A/D 5
A/D 7
A/D 8
KARAOKE ECHO
KA MUTE
GRID 11
GRID 10
GRID 9
JR104
JR103
JR102
EXCEPT X731
D115
D117
D118
5V
CONTROL SWITCH BLOCK
KARAOKE or MESECAM/PAL
NORMAL or SECAM
KARAOKE ON/OFF or SECAM ON/OFF
KARAOKE PON
OFF
VOCAL ASSIST
KARAOKE MODE
AUTO
PAL/MESECAM
NTSC
COLOR SYSTEM
Q-TIMER
TAPE SPEED
INPUT SELECT
REC
TIMER REC
(TV/VTR)
A-DUB
KARAOKE BAR
OFF
HALL
SORROUND
KEY /VOICE
#
♮
♭


CN104
POWER CONT
CN103
F (+)
F (−)
TO/FROM POWER BLOCK
D115
−30V
CG CS
TO VIDEO BLOCK 2
SI BUS
SO BUS
S CLK
TO/FROM SYSTEM CONTROL BLOCK
CN105
CN902
CN901
K881
PB
SO BUS
SI BUS
S CLK
KARAOKE CS
K MUTE
ECHO VR OUT
MIC CONT
TO/FROM KARAOKE BLOCK
POWER LED
D5V
Q902
LED DRIVE
D906
D908
S901
S902
POWER
EJECT
Q901
LED DRIVE
D903
STANDBY LED
MF−245 BOARD (3/3)
(See page 4-22)
CN903
PAL/NTSC
TO VIDEO BLOCK 2
CN101
D5V
FF LED
FWD LED
RVS LED
REW LED
DMS BLOCK
FWD/RVS
RING 2
RING 1
RING 0
SHUTTLE SWITCH
STOP
PLAY
CN102
X731
KARAOKE or MESECAM/PAL
NORMAL or SECAM
KARAOKE ON/OFF or SECAM ON/OFF
KARAOKE PON
OFF
VOCAL ASSIST
KARAOKE MODE
AUTO
PAL/MESECAM
NTSC
COLOR SYSTEM
Q-TIMER
TAPE SPEED
INPUT SELECT
REC
TIMER REC
(TV/VTR)
A-DUB
R REC
CONTROL SWITCH BLOCK
K881
KARAOKE BAR
OFF
HALL
SORROUND
KEY /VOICE
#
♮
b

3-9. POWER SUPPLY BLOCK DIAGRAM


CJ801
AC IN
F801 T2AH 250V
LF801, 802
LINE FILTER
D801
RECT
CP801
SWITCHING REGULATOR
13V
−13V
6V
CN701
CN702
UNSW 13V
UNSW −13V
CN302
CN301
IC810
12V REG
AN 12V
AN 5V
Q812
5V REG
IC810
9V REG
SW 9V
PT−97 BOARD (7/7)
(See page 4-26)
CN705
UNSW 12V
UNSW 5V
UNSW 9V
+35V
CP802
DC-DC, DC-AC CONVERTER
+35V
F (+)
F (−)
−30V
D810
Q810, 811
POWER SWITCH
M 12V
M 12V
D 6V
D204
BIAS
IC750
AUDIO AMP
RF701
RF MOD
736EE/X731/X821
TU701
12V
5V
9V
UHF/VHF TUNER
Q701
30V REG
DC 35V
M901
DRUM MOTOR
M 12V
CN201
IC1
CAP MOTOR DRIVE
CAP FG AMP
M902
CAPSTAN MOTOR
AN 5V
M 12V
CN002
CN703
CN704
IC401
PB/REC AMP SWITCH
IC402
TUNER/LINE AUDIO SELECT
IC303
SYNCHRO SERIAL BUS
IC202
CAP/DRUM ERROR INTEGRATOR
IC305
VIDEO SWITCH
IC101
PB/REC CTL
IC203
SERVO SYSTEM CONTROL CPU
IC002
WAVE SHAPER
T/S END SENS
IC306
VIDEO SWITCH
IC201
CAM/LOAD MOTOR DRIVE
T/S REEL FG
836EE/K881/X831
CN101
+35V
Q104
30V REG
TU101, IF101
UHF/VHF TUNER
UNSW 9V
UNSW 5V
UNSW 12V
IC101
B/G ST DUAL PROCESS
NCM01
NICAM MPX DECODER
IC102
COMPARATOR
IC002
AMP
TU−150 BOARD
05
(See page 4-55)
MF−246 BOARD
(See page 4-34)
CN104
POWER CONT
D 6V
D111
D112
IC101
TIMER/TUNER MODE CONTROL
IC104
POWER FAIL DET
IC103
RESET
IC105
REMOTE CONTROL RECEIVER
IC102
EEP ROM
IC106
LOGIC
CN103
−30V
F (−)
F (+)
ND101
FLUORESCENT DISPLAY TUBE
D5V
CN101
DMS BLOCK
MA−202 BOARD
(See page 4-21)

WER SUPPLY BLOCK DIAGRAM



F801
T2AH
250V
LF801, 802
LINE FILTER
D801
RECT
CP801
SWITCHING REGULATOR
13V
-13V
6V
IC810
12V REG
Q812
5V REG
IC810
9V REG
PT-97 BOARD (7/7)
(See page 4-26)
705
CP802
DC-DC, DC-AC CONVERTER
+35V
F(+)
F(-)
-30V
D810
Q810, 811
POWER SWITCH
IC750
AUDIO AMP
RF701
RF MOD
736EE/X731/X821
TU701
12V
5V
9V
UHF/ VHF TUNER
Q701
30V REG
DC 35V
CN703
CN704
E/K881/X831
101
+35V
Q104
30V REG
TU101, IF101
UHF/ VHF TUNER
UNSW 9V
UNSW 5V
UNSW 12V
IC101
B/G ST DUAL PROCESS
NCM01
NICAM MPX DECODER
IC102
COMPARATOR
IC002
AMP
TU-150 BOARD
(See page 4-55)
CN701
CN702
UNSW 13V
UNSW -13V
AN 12V
AN 5V
SW 9V
M 12V
D 6V
CN302
CN301
CN201
CN002
IC401
PB/REC AMP SWITCH
IC402
TUNER/LINE AUDIO SELECT
IC202
CAP/DRUM ERROR INTEGRATOR
IC101
PB/REC CTL
BIAS
D204
IC002
WAVE SHAPER
T/S END SENS
IC201
CAM/LOAD MOTOR DRIVE
T/S REEL FG
IC303
SYNCHRO SERIAL BUS
IC505
VIDEO SWITCH
IC203
SERVO SYSTEM CONTROL CPU
IC306
VIDEO SWITCH
M901
DRUM MOTOR
M 12V
IC1
CAP MOTOR DRIVE CAP FG AMP
M902
CAPSTAN MOTOR
MF-246 BOARD
(See page 4-34)
CN104
POWER CONT
D111
D112
IC101
TIMER/ TUNER MODE CONTROL
IC103
RESET
IC104
POWER FAIL DET
IC105
REMOTE CONTROL RECEIVER
IC102
EEP ROM
IC106
LOGIC
CN103
ND101
FLUORESCENT DISPLAY TUBE
D5V
CN101
DMS BLOCK
MA-202 BOARD
(See page 4-21)
CN601
CN303
CN304
CN402
CN406
CN802
CN803
CN001
CN002
Q810, 811
9V REG/ REC SWITCH
IC801
VIDEO REC/PB AMP
EXCEPT X731
IC260
AUDIO REC/PB AMP
IC001
VIDEO Y/C PROCESS
IC003
1H DELAY
IC004
GATE
IC201
SECAM DET
IC701
AMP
X731
IC702
SECAM PROCESS
RV-34 BOARD
(See page 4-11)
CN003
12V
SW 5V
CN301
Q304, 305
LPF AMP
IC301
1/3H CCD
SK-44 BOARD
AN 5V
-5.1V
D 6V
UNSW 5V
MF-245 BOARD
(See page 4-22)
CN903
CN901
D 5V
D903, 906, 908
STANDBY POWER
EXCEPT X731
CN101
UNREG +VCC
UNREG -VCC
VCC (+5.1V)
VEE (-5.1V)
IC101
AUDIO PROCESS
HF-34 BOARD
(See page 4-45)
VEE (-5.1V)
VCC (+5.1V)
UNSW 12V
D 6V
CN602
IC652
AUDIO MODE SEL BUFFER
(See page 4-47)
IO-51 BOARD
IC651
AMP
IC653
AMP
CN603
IC601
CHARACTER GENERATOR
IC602
SYNC DET
K881
KR-24 BOARD
CN104
D204
D203
+12V
-12V
AU 5V
CN101
IC101
MIC MIX AMP
IC251
MIC AMP
IC252
LINE AMP
IC301
AMP
IC302
MIC AMP
IC401
LINE AMP
IC204
A/D. D/A CONVERTER
IC205
A/D CONVERTER
IC351
AMS
IC353
OUTPUT SELECT
IC354
INPUT SELECT
IC201
D.S.P CONTROL
IC202
DIGITAL SOUND PROCESSOR
IC203
D.RAM
D201
D 5V
CN105
CN702
CN701
RV703
ECHO LEVEL
VR-43 BOARD
(See page 4-41)
CN901
IC302
MIC AMP
MJ-63 BOARD
(See page 4-41)

SECTION 4
PRINTED WIRING BOARDS
AND
SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:
- ○—— : indicates a lead wire mounted on the component side.
- •—— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ■ : Parts mounted on the conductor side.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.*
- Circled numbers refer to waveforms.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

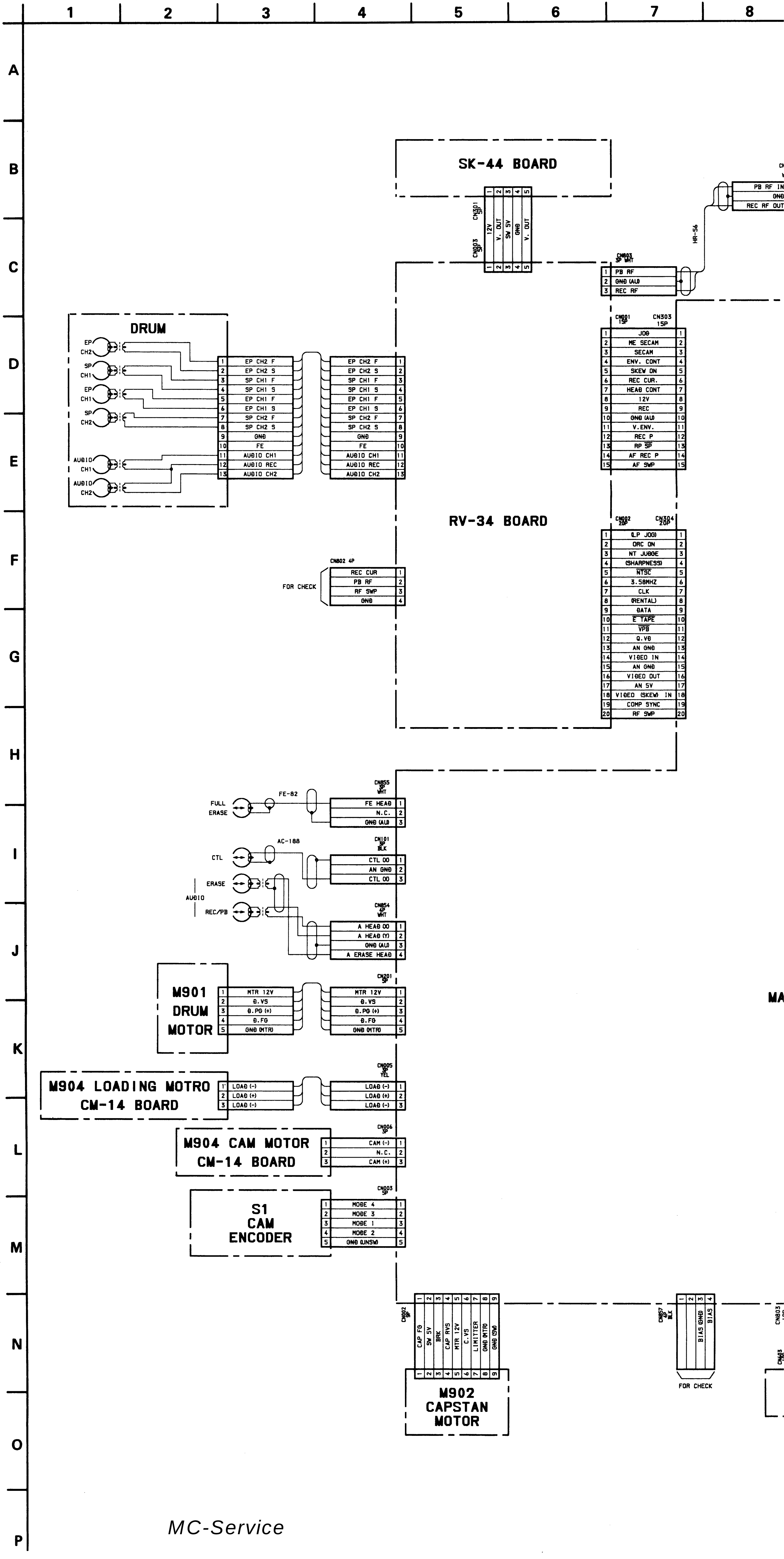
For schematic diagram:
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ∿ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair.*
- ━━ : B + Line.*
- ━ ━ ━ : B − Line.*
- ⇨ : IN/OUT direction of B line (+ , −).*
- Circled numbers refer to waveforms.*
- Voltages are dc between measurement point.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

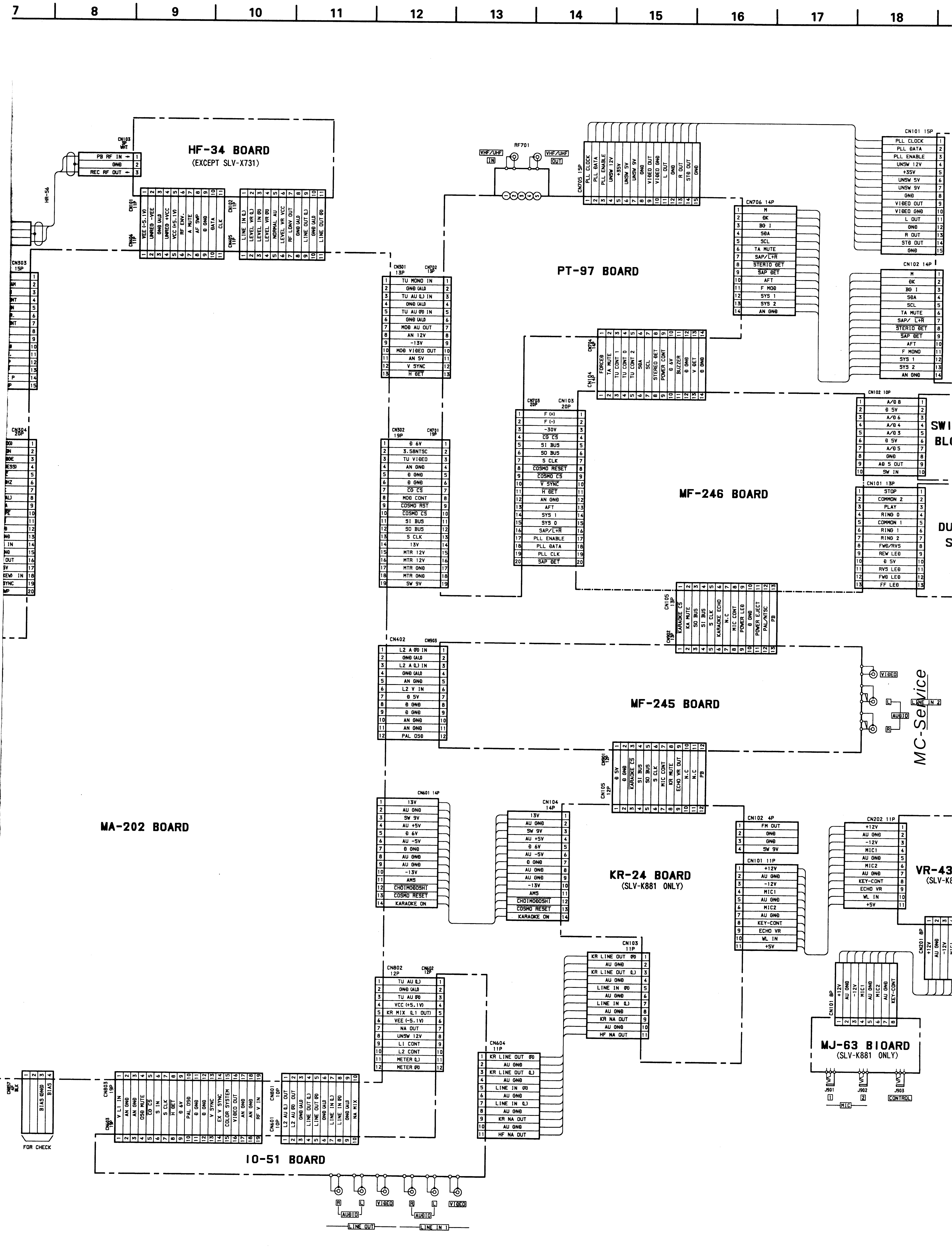
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

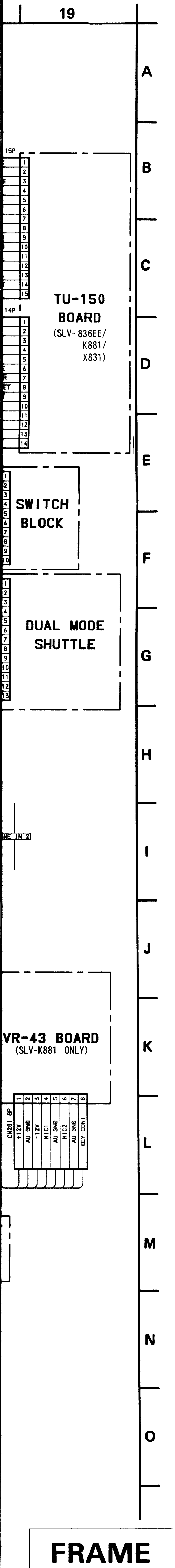
When indicating parts by reference number, please include the board name.

- * : indicated by the color red.

4-1. FRAME SCHEMATIC DIAGRAM

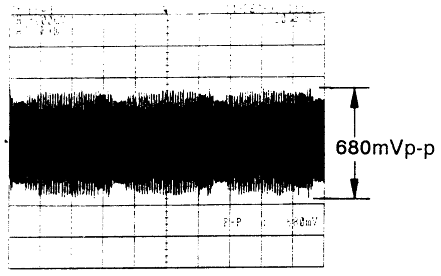

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
SK-44 BOARD
CN301 5P
12V
V. OUT
SW 5V
GND
V. OUT
CN003 5P
HR-56
PB RF IN
GND
REC RF OUT
CN803 3P WHT
PB RF
GND (A)
REC RF
DRUM
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
CN001 15P
CN303 15P
JOG
ME SECAM
SECAM
ENV. CONT
SKEW ON
REC CUR.
HEAD CONT
12V
REC
GND (A)
V.ENV.
REC P
RP SP
AF REC P
AF SWP
RV-34 BOARD
CN802 4P
FOR CHECK
REC CUR
PB RF
RF SWP
GND
CN002 20P
CN304 20P
LP JOG
ORC ON
NT JUDGE
(SHARPNESS)
NTSC
3.58MHZ
CLK
(RENTAL)
DATA
E TAPE
VPB
Q.VD
AN GND
VIDEO IN
AN GND
VIDEO OUT
AN 5V
VIDEO (SKEW) IN
COMP SYNC
RF SWP
FULL ERASE
FE-82
CN855 3P WHT
FE HEAD
N.C.
GND (A)
AC-188
CTL
CN101 3P BLK
CTL 00
AN GND
CTL 00
AUDIO
ERASE
REC/PB
CN854 4P WHT
A HEAD 00
A HEAD (Y)
GND (A)
A ERASE HEAD
M901 DRUM MOTOR
CN201 5P
MTR 12V
D.VS
D.PG (+)
D.FG
GND (MTR)
M904 LOADING MOTRO CM-14 BOARD
CN005 3P YEL
LOAD (-)
LOAD (+)
LOAD (-)
M904 CAM MOTOR CM-14 BOARD
CN006 3P
CAM (-)
N.C.
CAM (+)
S1 CAM ENCODER
CN003 5P
MODE 4
MODE 3
MODE 1
MODE 2
GND (UNSW)
CN002 9P
CAP FG
SW 5V
BRK
CAP RVS
MTR 12V
C.VS
LIMITTER
GND (MTR)
GND (SW)
M902 CAPSTAN MOTOR
CN857 3P BLK
BIAS
BIAS (GND)
BIAS
FOR CHECK
CN803
MA


7
8
9
10
11
12
13
14
15
16
17
18
HF-34 BOARD
(EXCEPT SLV-X731)
PB RF IN
GND
REC RF OUT
HR-56
CN101 11P
CN102 11P
VEE (-5.1V)
UNREG -VEE
UNREG +VCC
VCC (+5.1V)
RF ENV.
A MUTE
AF SWP
D GND
DATA
CLK
LINE IN (L)
LEVEL VR (L)
LEVEL IN (R)
LEVEL VR (R)
NORMAL AU
LEVEL VR VCC
RF LDNV OUT
GND (AU)
LINE OUT (L)
LINE OUT (R)
RF701
VHF/UHF IN
VHF/UHF OUT
CN705 15P
PLL CLOCK
PLL DATA
PLL ENABLE
UNSW 12V
+35V
UNSW 5V
UNSW 9V
VIDEO OUT
VIDEO GND
L OUT
R OUT
STD OUT
PT-97 BOARD
CN706 14P
CN301 13P
CN702 13P
TU MONO IN
GND (AU)
TU AU (L) IN
TU AU (R) IN
MOD AU OUT
AN 12V
-13V
MOD VIDEO OUT
AN 5V
V SYNC
H DET
CN101 15P
CN102 14P
CN704 14P
CN104 14P
FORCED
TA MUTE
TU CONT 1
TU CONT 0
TU CONT 2
SDA
SCL
STEREO DET
POWER CONT
D 5V
BUZZER
V DET
D GND
CN703 20P
CN103 20P
F (+)
F (-)
-30V
CG CS
SI BUS
SO BUS
S CLK
COSMO RESET
COSMO CS
V SYNC
H DET
AN GND
AFT
SYS 1
SYS 0
SAP/L+R
PLL ENABLE
PLL DATA
PLL CLK
SAP DET
CN302 19P
CN701 19P
D 6V
3.58NTSC
TU VIDEO
MOD CONT
COSMO RST
MTR 12V
MTR GND
SW 9V
MF-246 BOARD
CN102 10P
SWI BL
CN101 13P
STOP
COMMON 2
PLAY
RING 0
COMMON 1
RING 1
RING 2
FWD/RVS
REW LED
RVS LED
FWD LED
FF LED
DU S
CN105 13P
CN902 13P
KARAOKE CS
KA MUTE
KARAOKE ECHO
N.C
MIC CONT
POWER LED
POWER EJECT
PAL/NTSC
PB
CN402
CN903
L2 A (R) IN
L2 A (L) IN
L2 V IN
PAL OSD
MF-245 BOARD
VIDEO
L
AUDIO
R
LINE IN 2
CN901 12P
CN105 12P
ECHO VR OUT
KR MUTE
CN601 14P
CN104 14P
13V
AU GND
AU +5V
AU -5V
-13V
AMS
CHDIMODOSHI
COSMO RESET
KARAOKE ON
MA-202 BOARD
KR-24 BOARD
(SLV-K881 ONLY)
CN102 4P
FM OUT
CN101 11P
+12V
-12V
MIC1
MIC2
KEY-CONT
ECHO VR
WL IN
+5V
CN202 11P
VR-43
CN201 8P
CN103 11P
KR LINE OUT (R)
KR LINE OUT (L)
LINE IN (R)
LINE IN (L)
KR NA OUT
HF NA OUT
CN802 12P
CN402 12P
TU AU (L)
TU AU (R)
VCC (+5.1V)
KR MIX (L1 OUT)
VEE (-5.1V)
NA OUT
UNSW 12V
L1 CONT
L2 CONT
METER (L)
METER (R)
CN604 11P
CN101 8P
MJ-63 BOARD
(SLV-K881 ONLY)
J901
J902
J903
MIC
CONTROL
CN853 4P
BIAS (GND)
BIAS
FOR CHECK
CN803 19P
CN603 19P
V L1 IN
OSD MUTE
S IN
S CLK
H DET
D 6V
PAL OSD
EX V SYNC
COLOR SYSTEM
VIDEO OUT
RF V IN
CN801 10P
CN601 10P
L2 AU (L) OUT
L2 AU (R) OUT
LINE OUT (L)
LINE OUT (R)
LINE IN (L)
LINE IN (R)
NA MIX
IO-51 BOARD
R
L
VIDEO
AUDIO
LINE OUT
LINE IN 1
CN303 15P
CN304 20P
MC-Service

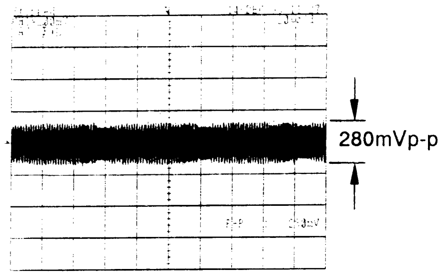

19
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
15P
14P
TU-150
BOARD
(SLV-836EE/
K881/
X831)
SWITCH
BLOCK
DUAL MODE
SHUTTLE
VR-43 BOARD
(SLV-K881 ONLY)
CN201 8P
+12V
AU GND
-12V
MIC1
AU GND
MIC2
AU GND
KEY-CONT

RV-34 BOARD (NTSC 3.58 MODE)

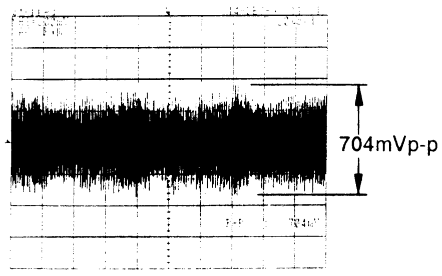
❶ IC801 ④ REC 20 μsec/DIV



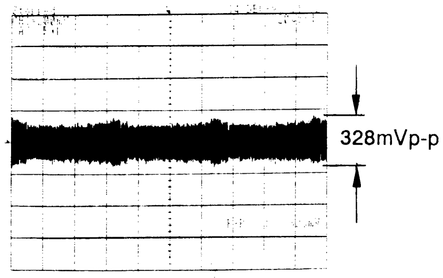
❷ IC801 ㉙ REC 20 μsec/DIV



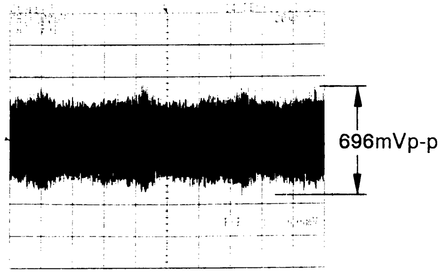
❸ IC801 ㉓ PB 20 μsec/DIV



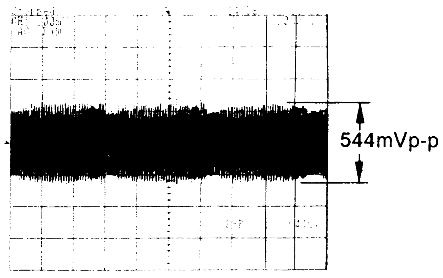
❹ IC801 ㉕ PB 20 μsec/DIV



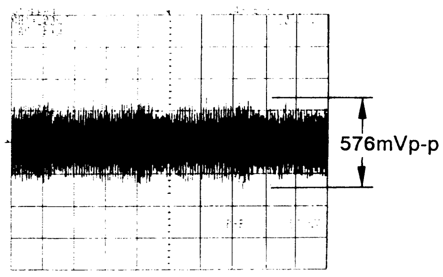
❺ IC801 ㉗ PB 20 μsec/DIV



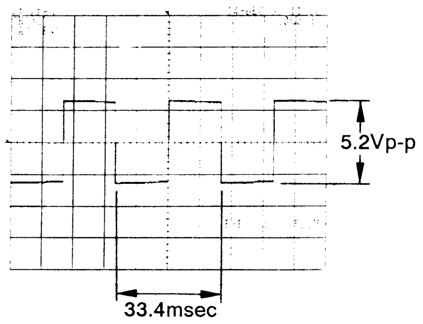
❻ CN802 ① REC 20 μsec/DIV



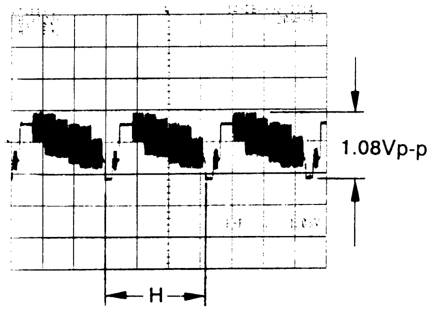
❼ CN802 ② PB 20 μsec



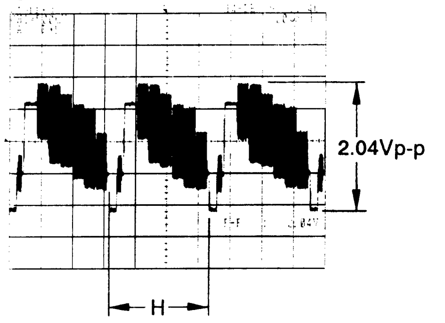
❽ CN802 ③ REC/PB



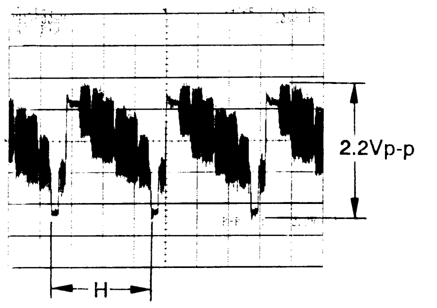
❾ IC001 ㉖ REC



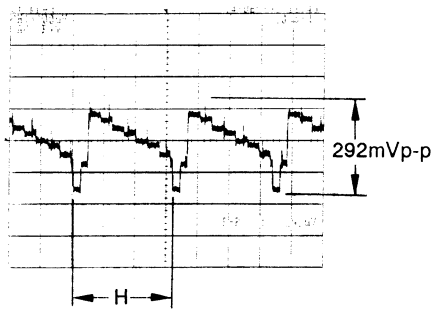
❿ IC001 ㉘ REC



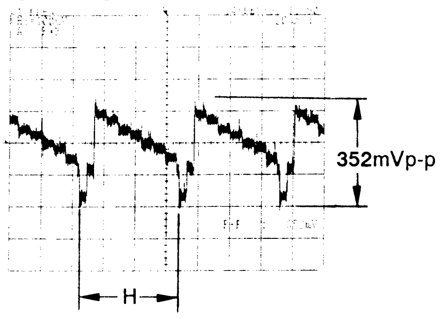
❿ IC001 ㉘ PB



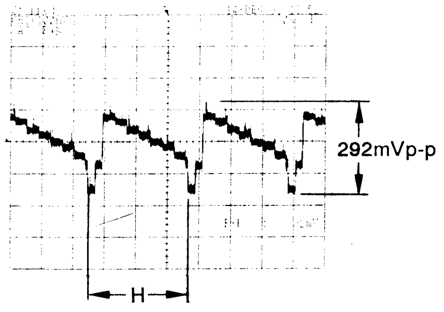
⓫ IC001 ㉝ REC



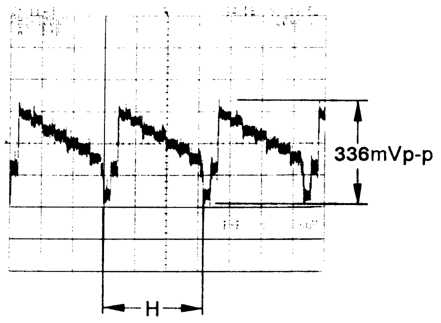
⓫ IC001 ㉝ PB



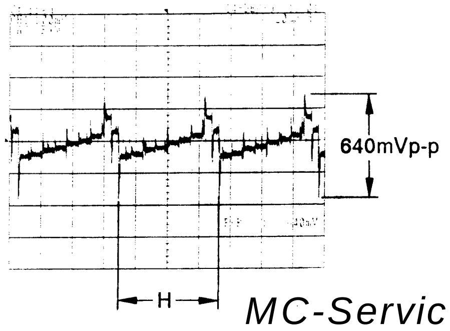
⓬ IC001 ㉜ REC



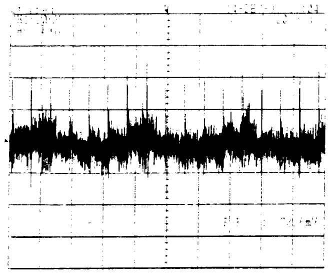
⓬ IC001 ㉜ PB



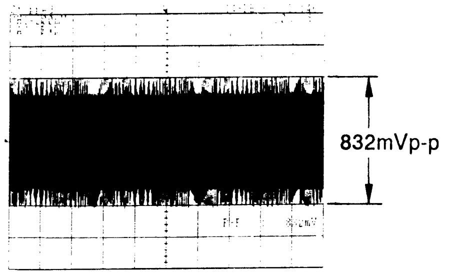
⓭ IC001 ㊺ REC



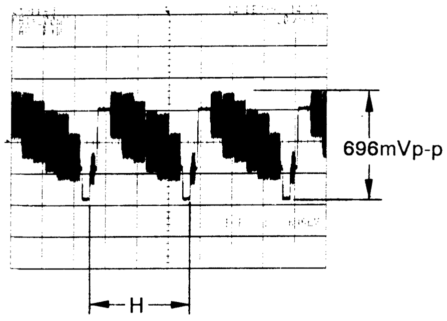
⓮ IC001 ㊼ REC 20 mV/DIV
20 μsec/DIV



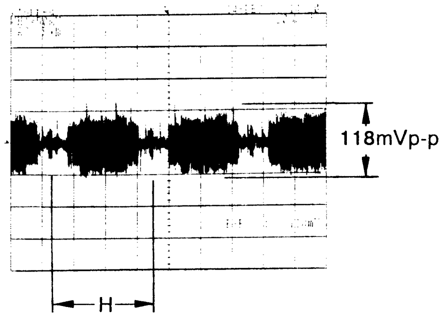
⓯ IC001 (50) REC 20 μsec/DIV



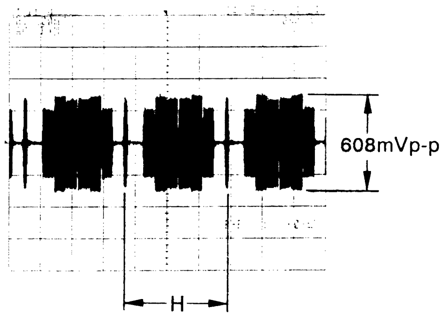
⓰ IC001 ⑳ REC



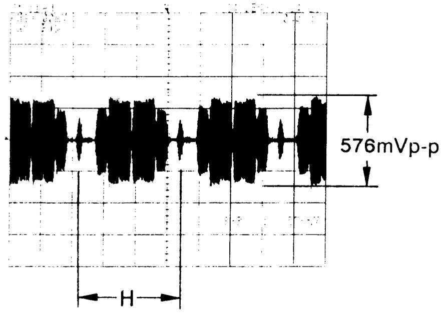
⓱ IC001 ⑱ REC



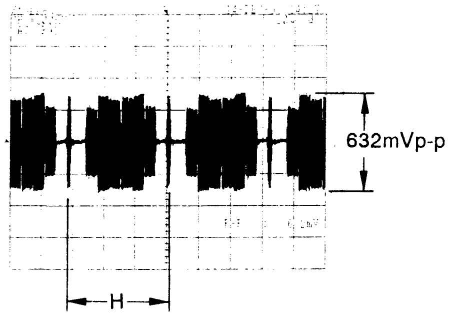
⓲ IC001 ⑯ REC



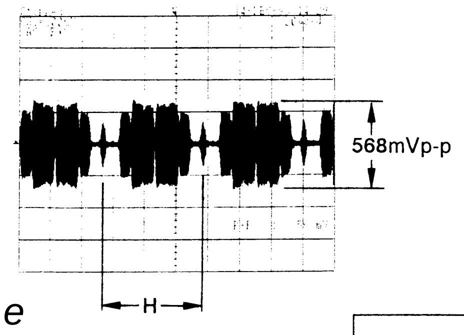
⓲ IC001 ⑯ PB



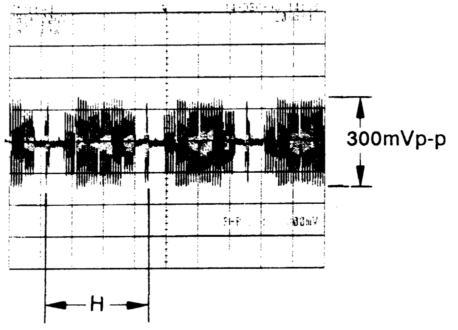
⓳ IC001 ⑭ REC



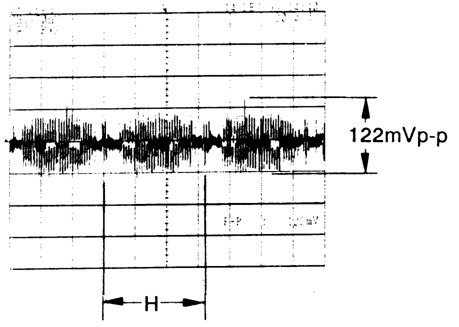
⓳ IC001 ⑭ PB



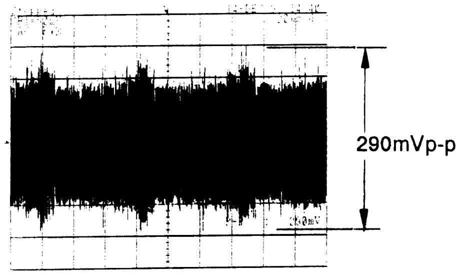
⓴ IC001 (53) REC



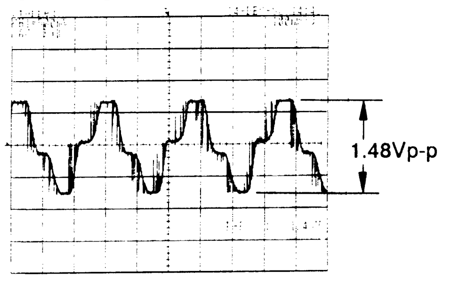
(21) IC001 (51) PB



(22) IC001 ㊸ PB 20 μsec/DIV

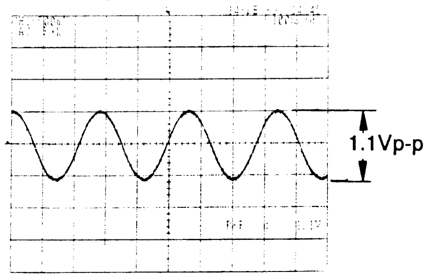


(23) IC001 ⑥ REC/PB



3.58MHz

(24) IC001 ⑦ REC/PB

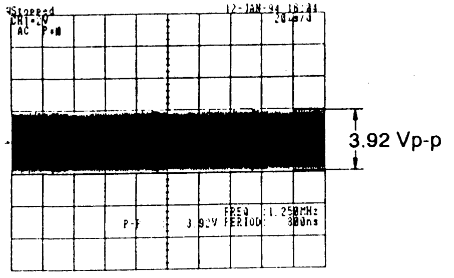


3.58MHz

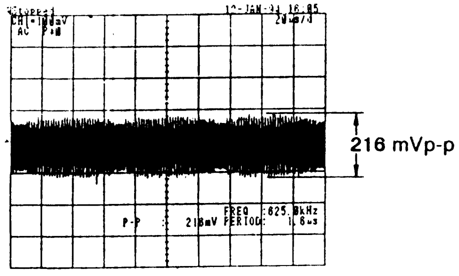
SLV-736EE/836EE/K881/ X731/X821/X831

RV-34 BOARD (PAL MODE)

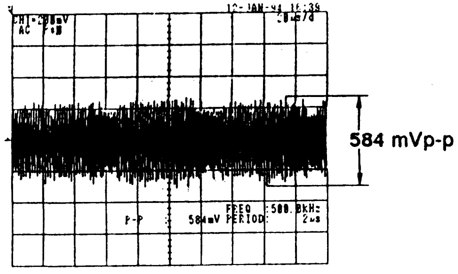
❶ IC801 ④ REC 20 μsec/DIV



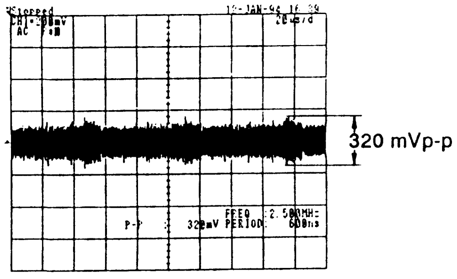
❷ IC801 ㉙ REC 20 μsec/DIV



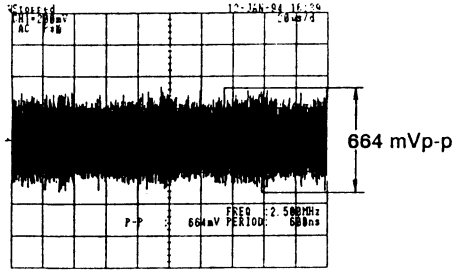
❸ IC801 ㉓ PB 20 μsec/DIV



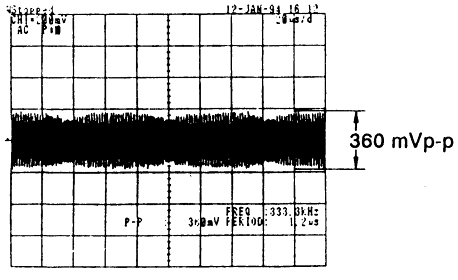
❹ IC801 ㉕ PB 20 μsec/DIV



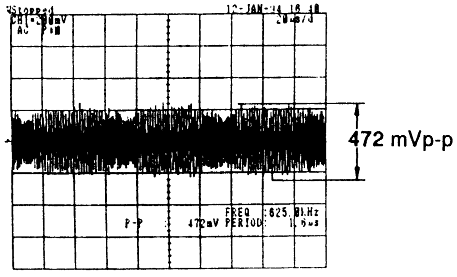
❺ IC801 ㉗ PB 20 μsec/DIV



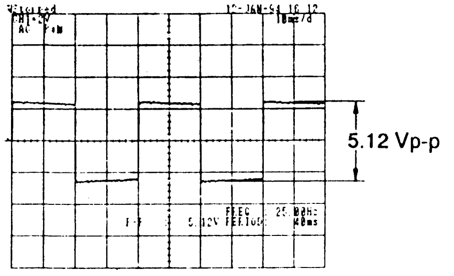
❻ CN802 ① REC 20 μsec/DIV



❼ CN802 ② PB 20 μsec/DIV

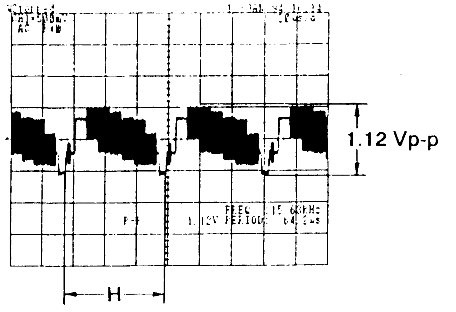


❽ CN802 ③ REC/PB

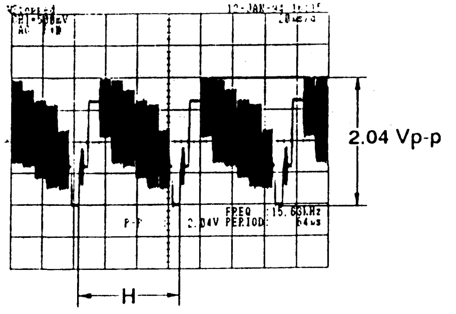


25 Hz

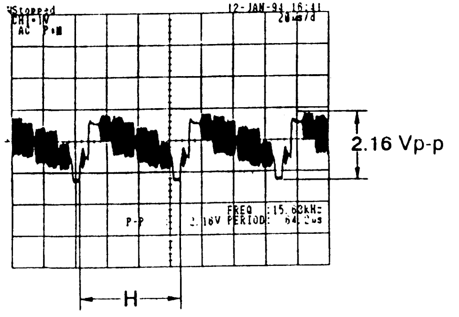
❾ IC001 ㉖ REC



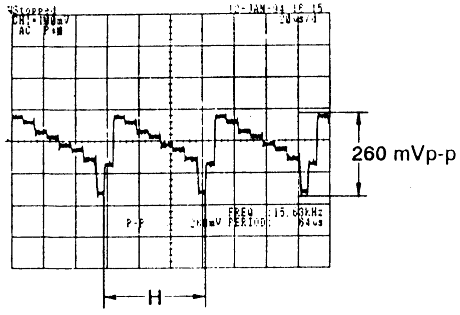
❿ IC001 ㉘ REC



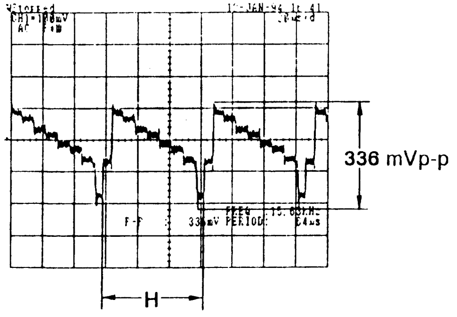
❿ IC001 ㉘ PB



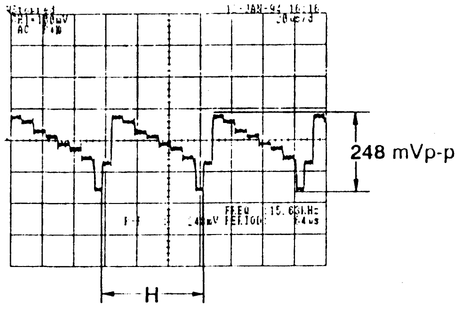
⓫ IC001 ㉝ REC



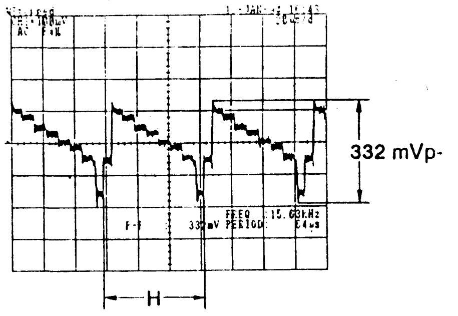
⓫ IC001 ㉝ PB



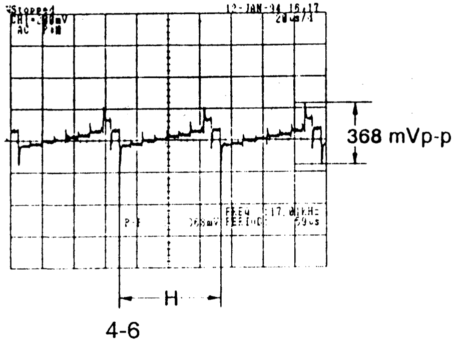
⓬ IC001 ㉜ REC



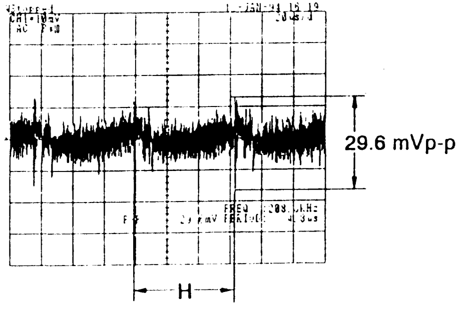
⓬ IC001 ㉜ PB



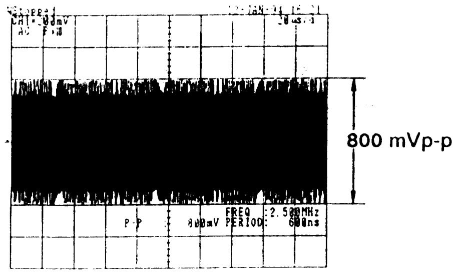
⓭ IC001 ㊺ REC



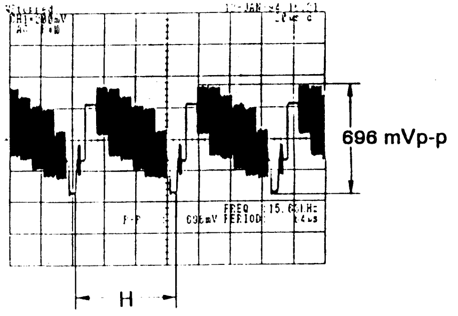
⓮ IC001 ㊼ REC



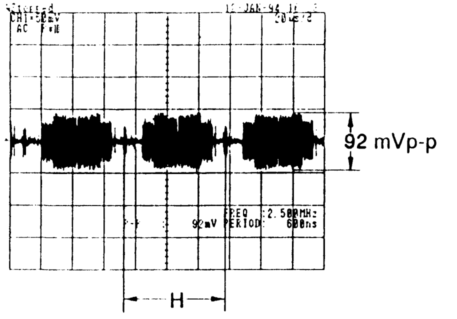
⓯ IC001 ㊿ REC 20 μsec/DIV



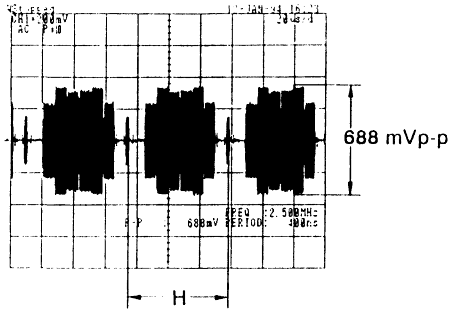
⓰ IC001 ⑳ REC



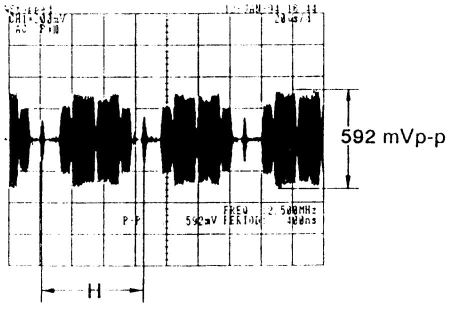
⓱ IC001 ⑱ REC



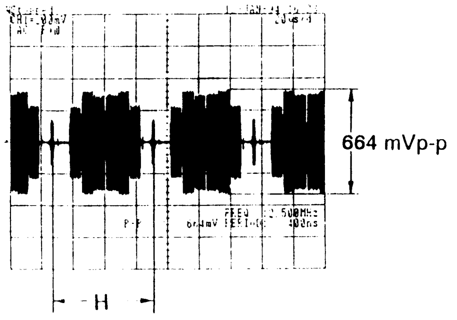
⓲ IC001 ⑯ REC



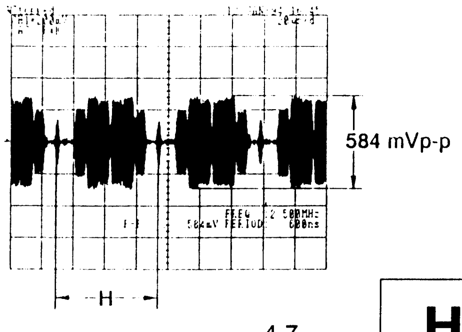
⓲ IC001 ⑯ PB



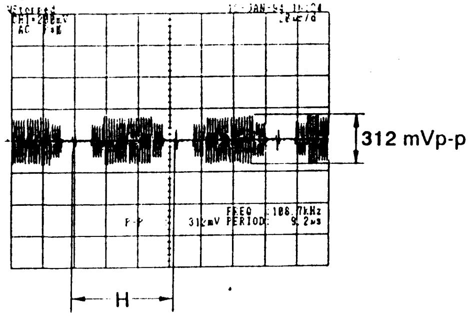
⓳ IC001 ⑭ REC



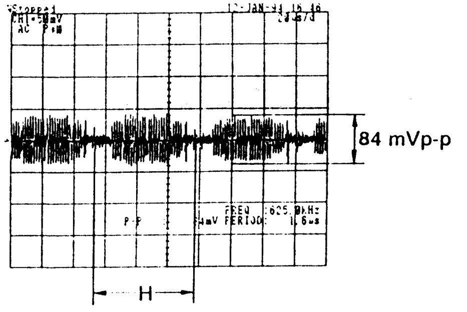
⓳ IC001 ⑭ PB



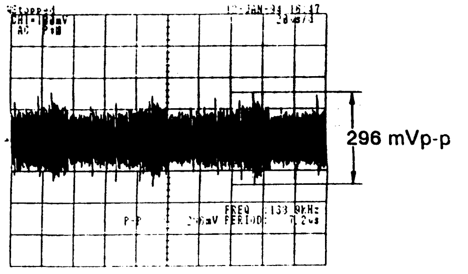
⓴ IC001 (53) REC



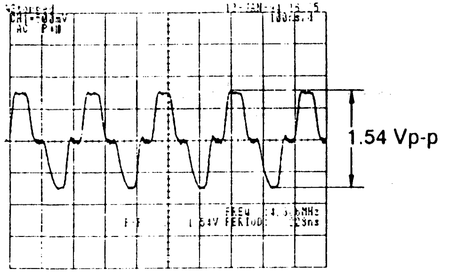
㉑ IC001 (51) PB



㉒ IC001 ㊸ PB

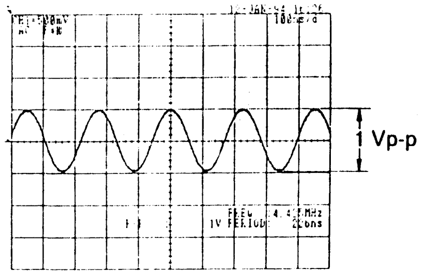


㉓ IC001 ⑥ REC/PB



4.43 MHz

㉔ IC001 ⑦ REC/PB

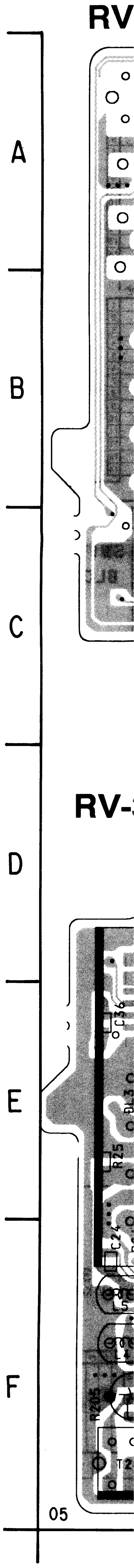


4.43 MHz

4-2. PRINTED W

RV-34 (HEAD AMP, V

– Ref. No.: RV-34 and S



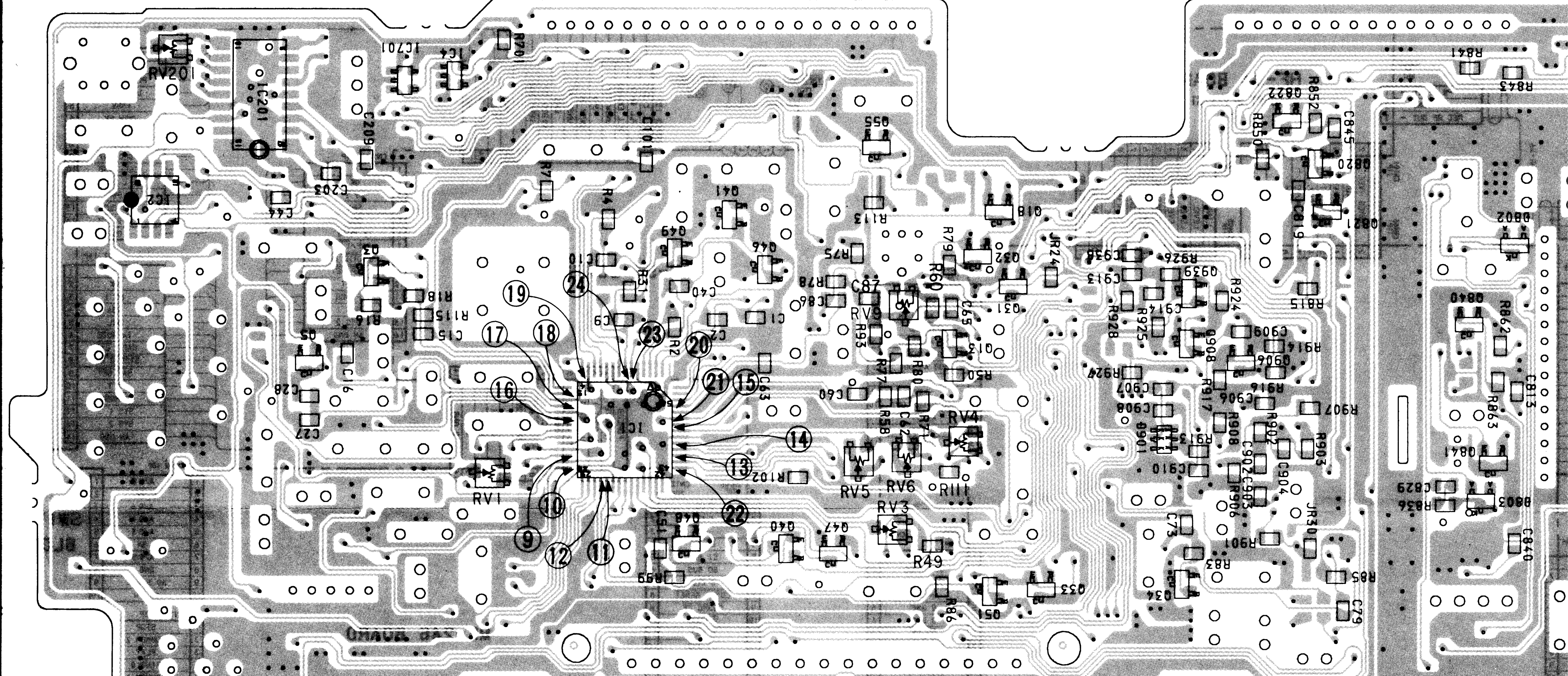
HEAD AMP, VIDEO   HEAD AMI

NTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

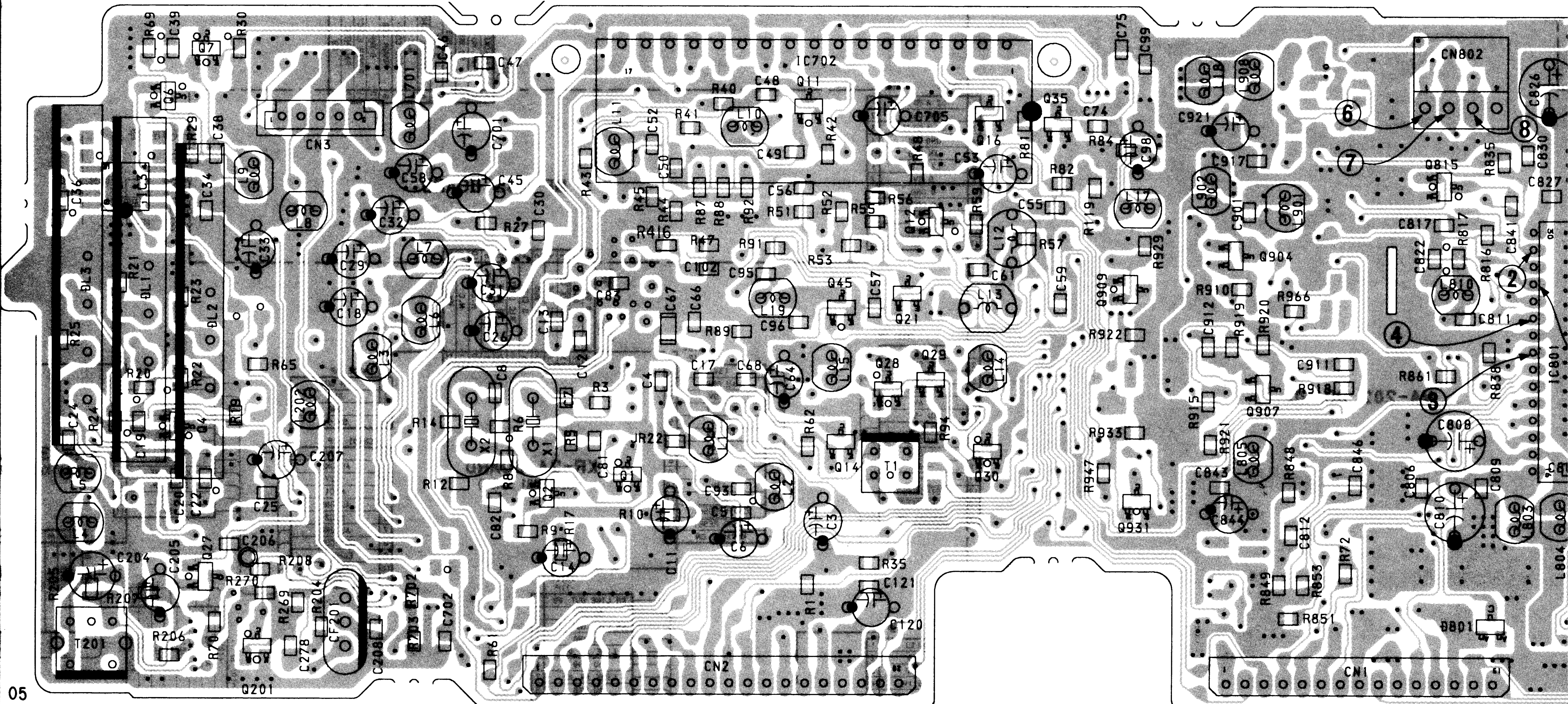
D AMP, VIDEO), SK-44 (CCD) PRINTED WIRING BOARDS

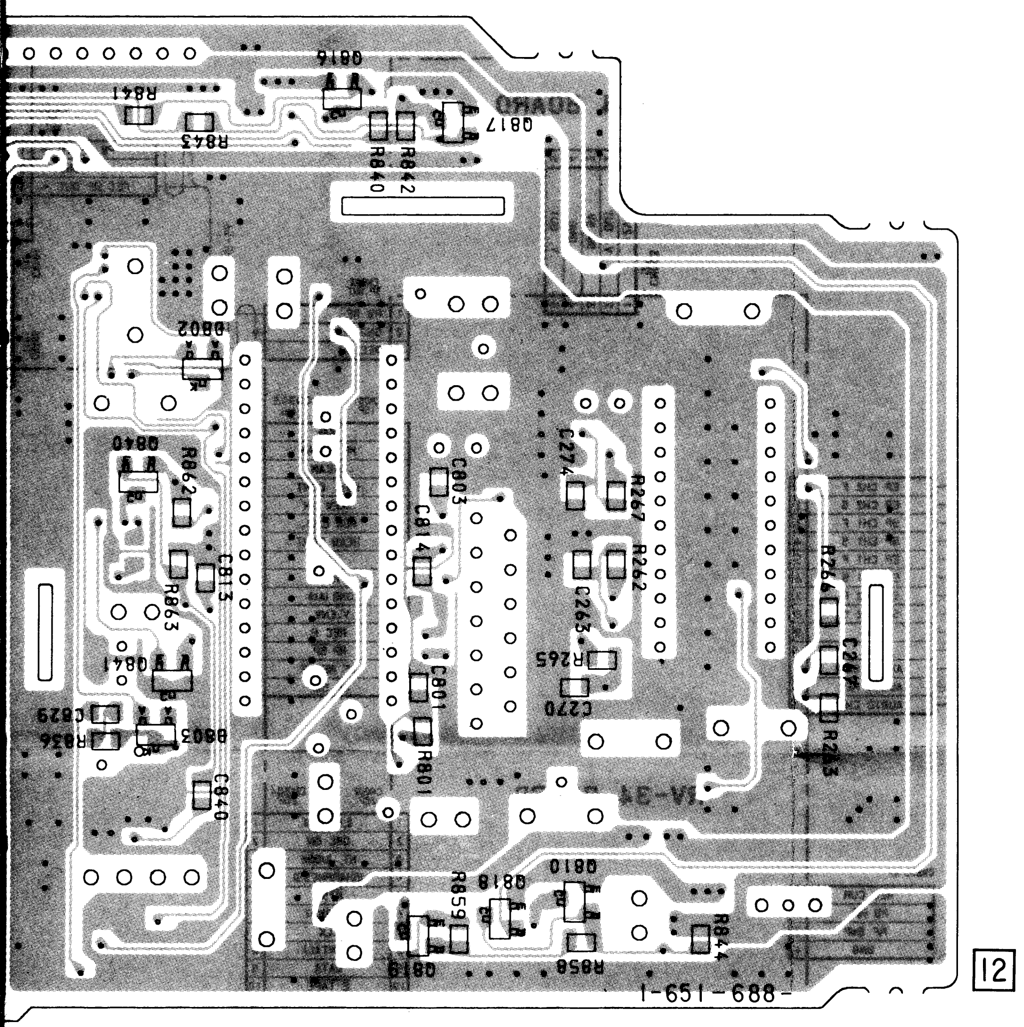
V-34 and SK-44 Boards; 1,000 series –

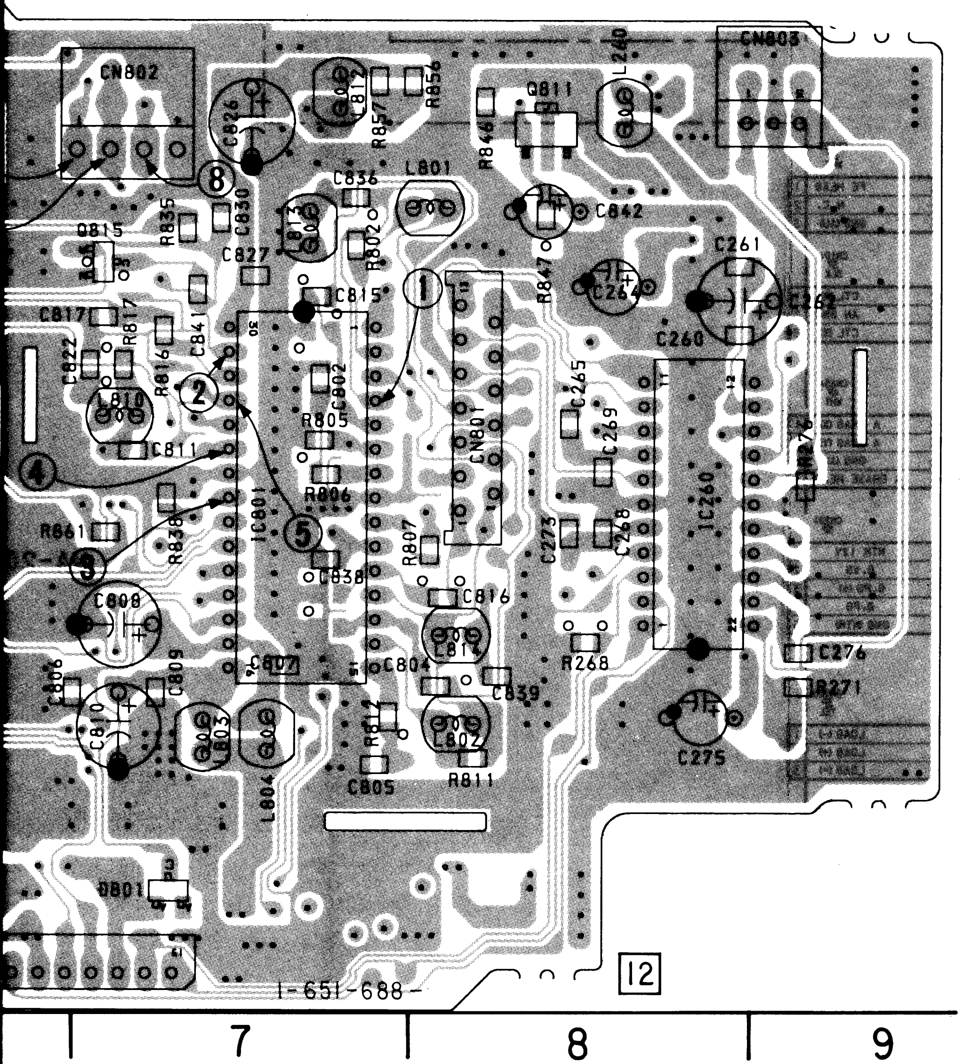
RV-34 BOARD (COMPONENT SIDE)


RV201
IC201
IC701
IC2
IC1
RV1
RV3
RV4
RV5
RV6
RV9
CN3
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔

RV-34 BOARD (CONDUCTOR SIDE)

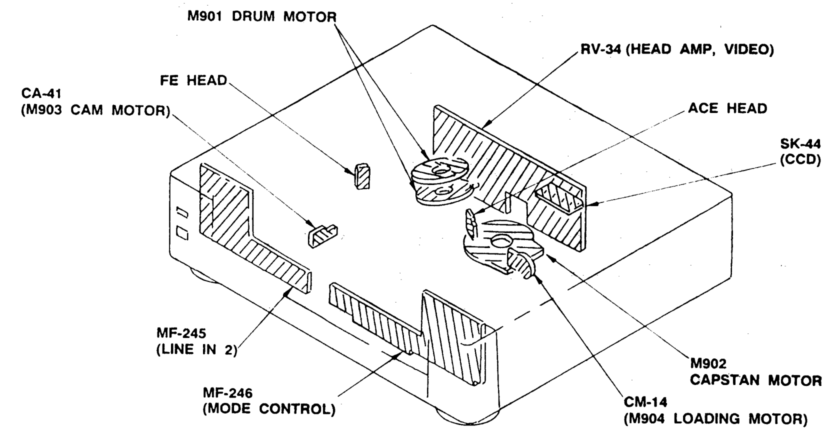

IC702
CN2
CN1
CN3
CN802
IC801
T1
T201
Q201
05
1
2
3
4
5
6
7
②
④
⑤
⑥
⑦
⑧


1-651-688-
12
Q816
Q817
R841
R843
R840
R842
Q802
Q840
R862
R863
C813
Q841
C829
R836
Q803
C840
C803
C814
C801
R801
C274
R267
R262
C263
R265
C270
R264
C267
R263
Q810
Q818
R859
R844
R858
Q819

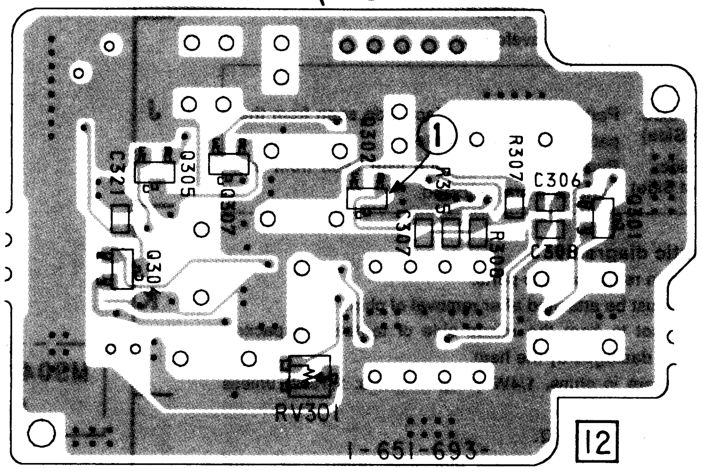

CN802
CN803
C826
C812
R857
R856
Q811
L270
R849
C836
L801
C842
Q815
R835
C830
C827
Q813
R802
C261
C264
R847
C815
C817
R817
C841
R816
C822
Q810
C811
C802
R805
R806
IC801
IC260
C260
C262
C265
C269
R270
R661
R838
C838
C273
R273
R807
C808
C816
L814
C807
C804
C839
R268
C276
R271
C806
C810
C805
Q803
L803
L804
R811
L802
C805
C275
D801
1-651-688-
12
7
8
9

RV-34 BOARD

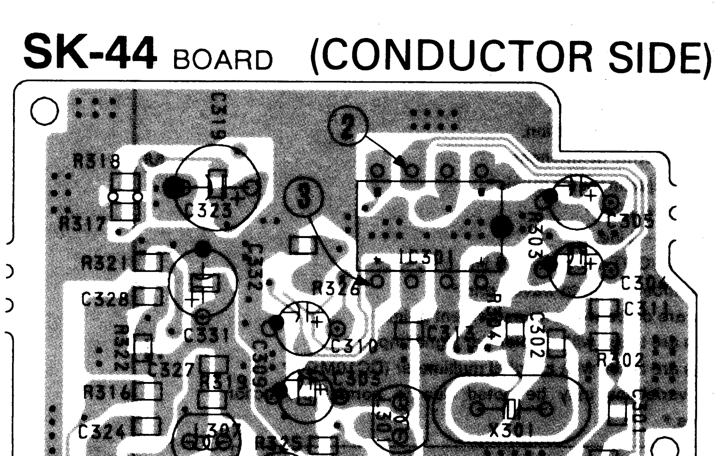
CN001	F-6
CN002	F-4
CN003	D-2
CN801	E-8
CN802	D-7
CN803	D-9
D801	F-7
D802	B-7
D803	C-7
D901	B-5
IC001	B-3
IC002	A-1
IC003	E-1
IC004	A-2
IC201	A-2
IC260	E-8
IC701	A-2
IC702	D-4
IC801	E-7
Q001	F-3
Q002	F-3
Q003	B-2
Q004	F-1
Q005	B-2
Q006	D-1
Q007	D-1
Q011	D-4
Q012	E-4
Q013	B-5
Q014	F-4
Q016	D-5
Q018	A-5
Q021	E-4
Q027	F-1
Q028	E-4
Q029	E-4
Q030	F-5
Q031	B-5
Q032	B-5
Q033	C-5
Q034	C-5
Q035	D-5
Q040	C-4
Q041	A-4
Q045	E-4
Q046	B-4
Q047	C-4
Q048	C-3
Q049	B-3
Q051	C-5
Q055	A-4
Q201	F-2
Q810	C-8
Q811	D-8
Q815	E-7
Q816	A-7
Q817	A-8
Q818	C-8
Q819	C-8
Q820	A-6
Q821	A-6
Q822	A-6
Q840	B-7
Q841	B-7
Q904	E-6
Q906	B-6
Q907	E-6
Q908	B-6
Q909	E-5
Q931	F-5
Q939	B-6


M901 DRUM MOTOR
RV-34 (HEAD AMP, VIDEO)
FE HEAD
CA-41
(M903 CAM MOTOR)
ACE HEAD
SK-44
(CCD)
MF-245
(LINE IN 2)
M902
CAPSTAN MOTOR
MF-246
(MODE CONTROL)
CM-14
(M904 LOADING MOTOR)

SK-44 BOARD (COMPONENT SIDE)


①
Q302
R307
C306
Q301
C321
Q305
Q307
C307
R306
C308
Q304
RV301
1-651-693-
12

SK-44 BOARD (CONDUCTOR SIDE)


C319
②
R318
C323
③
R317
C305
R321
C332
R324
L301
C303
C304
C328
C331
C310
C311
C313
C302
R322
C327
R302
R314
C324
X301
R325
CN301
R301
05
1-651-693-
12

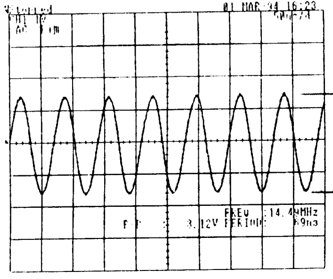
RV-34 (HEAD AMP, VIDEO), SK-44 (CCD) SCHEMATIC DIAGRAM

– Ref. No.: RV-34 and SK-44 Boards; 1,000 series –

- See pages 4-4 to 4-7 for waveforms.

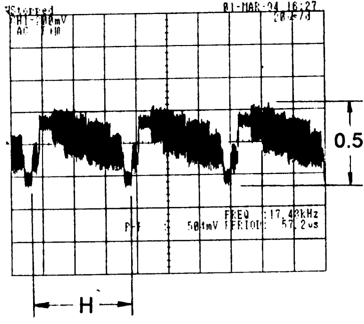
SK-44 BOARD

❶ Q302 Ⓑ REC/PB

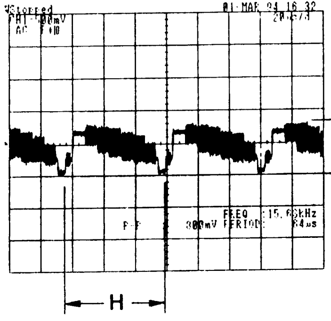


14.318MHz

❷ IC301 ⑥ REC/PB



❸ IC301 ④ REC/PB

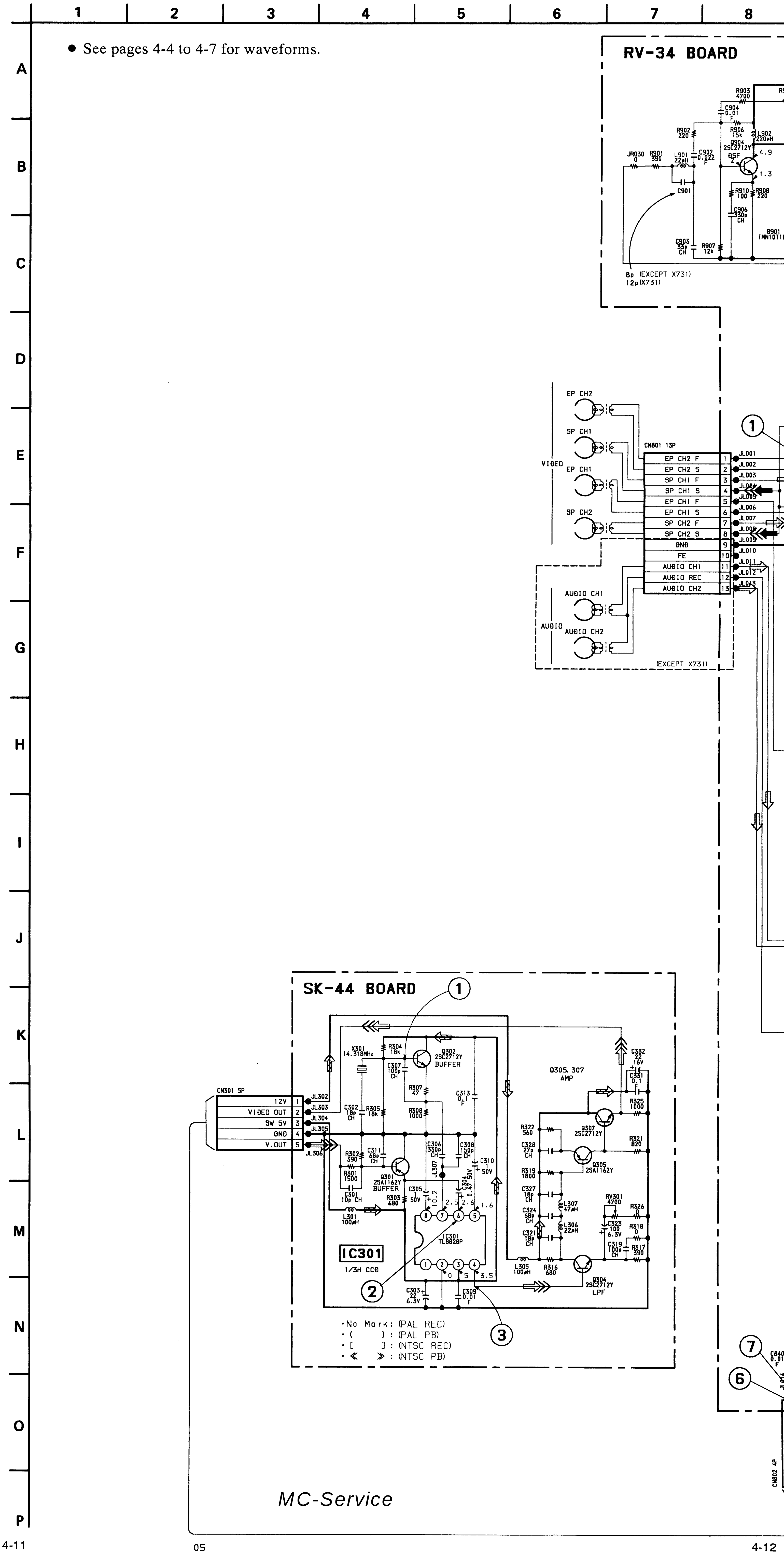


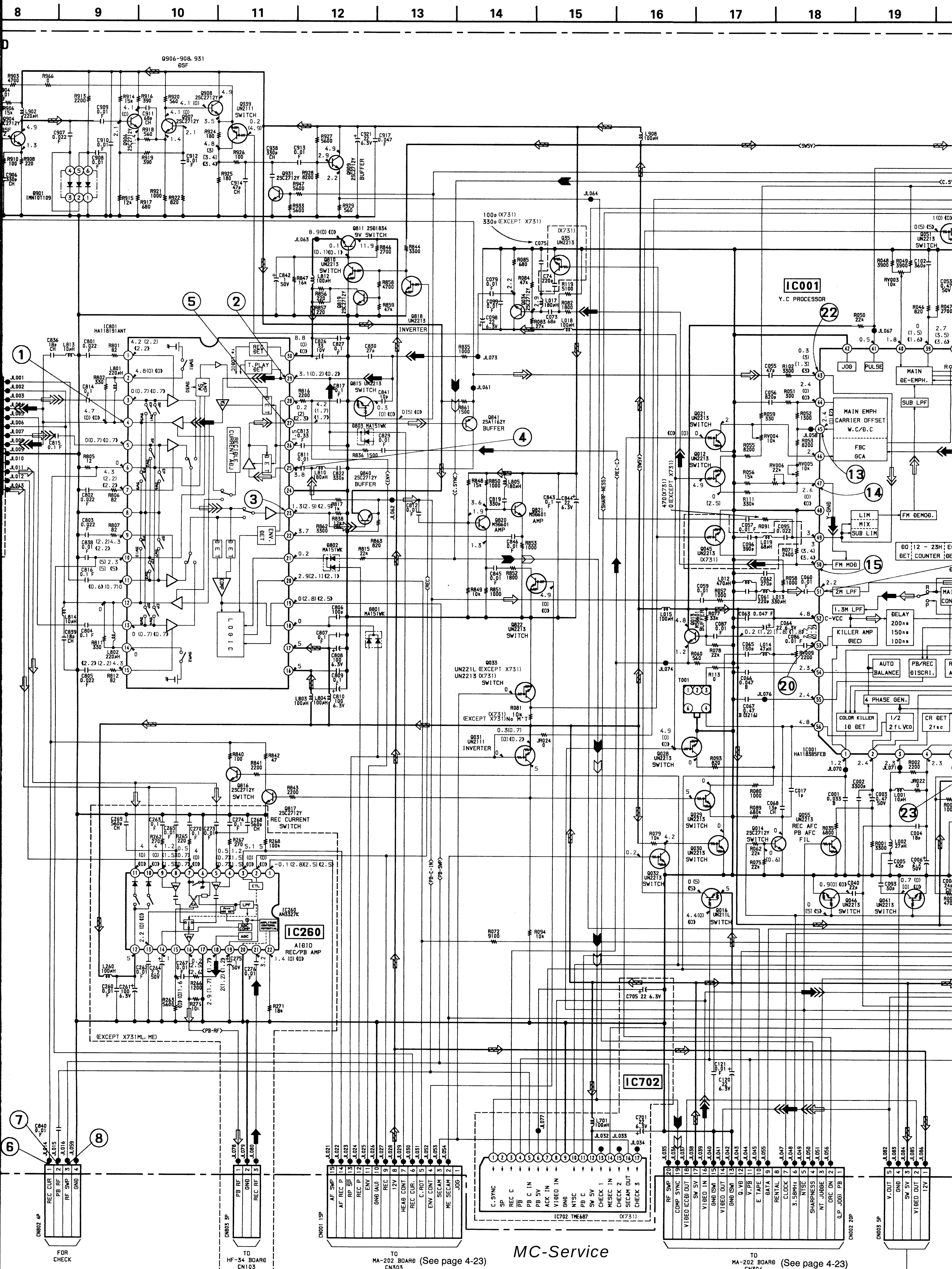
- * : Impossible to measure the voltage at the marked points.

- Signal path

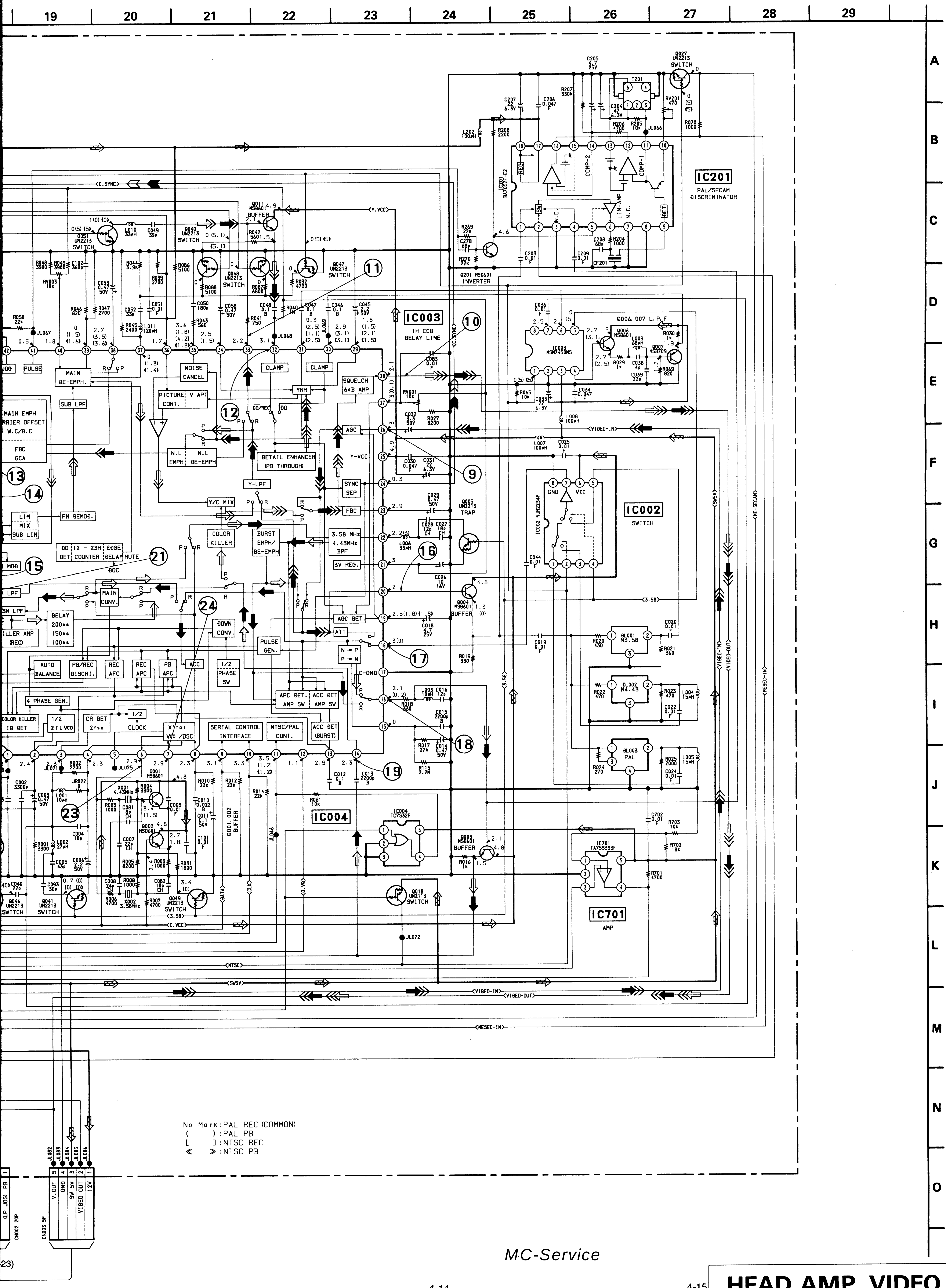
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	➡
PB	⇨	⇨>	⇨>>	⇨

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷>	
Drum servo (speed and phase)		▷>>	
Capstan speed servo		⊐	
Capstan phase servo	➡>	⊐>	⊐>
Capstan servo (speed and phase)		⊐>>	
Ref. signal	➡	⊐	⊐


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
RV-34 BOARD
R903 4700
C904 0.01
R902 220
R906 15k
L902 220μH
Q904 2SC2712Y
JR030 0
R901 390
L901 22μH
C902 0.022
C901
R910 100
R908 220
C906 330p
C903 33p
R907 12k
8p (EXCEPT X731)
12p (X731)
EP CH2
SP CH1
VIDEO
EP CH1
SP CH2
AUDIO CH1
AUDIO
AUDIO CH2
(EXCEPT X731)
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
SK-44 BOARD
X301 14.318MHz
R304 18k
Q302 2SC2712Y BUFFER
C307 100p
R307 47
C313 0.1
R308 1000
Q305, 307 AMP
C332 22 16V
C331 0.1
R325 1000
CN301 5P
12V
VIDEO OUT
SW 5V
GND
V.OUT
C302 18p
R305 18k
R302 390
C311 68p
R301 1500
C301 10p
L301 100μH
Q301 2SA1162Y BUFFER
R303 680
C306 330p
C308 150p
C310 50V
C304 0.47 50V
C305 50V
IC301 TL8828P
IC301
1/3H CCD
C303 22 6.3V
C309 0.01
R322 560
C328 27p
R319 1800
C327 18p
C324 68p
C321 18p
L307 47μH
L306 22μH
L305 100μH
R316 680
Q307 2SC2712Y
R321 820
Q305 2SA1162Y
RV301 4700
R326
C323 100 6.3V
R318
C319 100p
R317 390
Q304 2SC2712Y LPF
•No Mark : (PAL REC)
•( ) : (PAL PB)
•[ ] : (NTSC REC)
•≪ ≫ : (NTSC PB)
CN802 4P


8
9
10
11
12
13
14
15
16
17
18
19
Q906-908, 931
BSF
Q939 UN2111 SWITCH
Q909 2SC2712Y BUFFER
D901 1MN10T109
Q811 2SD1834 9V SWITCH
Q810 UN2213 SWITCH
Q818 UN2213 INVERTER
Q815 UN2213 SWITCH
Q840 2SC2712Y BUFFER
Q841 2SA1162Y BUFFER
Q820 M5601 AMP
Q821 M5601 AMP
Q822 UN2213 SWITCH
Q033 UN221L (EXCEPT X731) UN2213 (X731) SWITCH
Q031 UN2111 INVERTER
Q816 2SC2712Y SWITCH
Q817 2SC2712Y REC CURRENT SWITCH
IC801 HA11819 1ANT
REC BET
T.PLAY DET
CURRENT ADJ.
ENV. DET
COMP
LOGIC
D803 MA151WK
D802 MA151WK
D801 MA151WK
IC260
IC260 AN3327K
A1010 REC/PB AMP
LPF
CTL
ADC
(EXCEPT X731ML, ME)
(PB-RF)
IC001
Y.C PROCESSOR
IC001 HA118385FEB
JOG
PULSE
MAIN DE-EMPH.
SUB LPF
MAIN EMPH CARRIER OFFSET W.C/D.C
FBC GCA
LIM MIX SUB LIM
FM DEMOD.
FM MOD
2M LPF
1.3M LPF
DELAY 200ns 150ns 100ns
KILLER AMP (REC)
AUTO BALANCE
PB/REC DISCRI.
4 PHASE GEN.
COLOR KILLER 1H DET
1/2 2 f L VCO
CR DET 2fsc
00 12 - 23H DET COUNTER
C-VCC
Q035 UN2213
Q034 2SC2712Y
Q021 UN2213 SWITCH
Q012 UN2213 SWITCH
Q045 UN2213 (X731)
Q013 M5601 BUFFER
Q028 UN2213 SWITCH
Q029 UN2213 SWITCH
Q030 UN2213 SWITCH
Q032 UN2213 SWITCH
Q016 UN211L SWITCH
Q014 2SC2712Y SWITCH
Q055 UN2213 REC AFC PB AFC FIL
Q046 UN2213 SWITCH
Q041 UN2213 SWITCH
Q051 UN2213 SWITCH
T001
(C.SYNC)
(SHARP-NESS)
(REC-C)
(SW5V)
(REC)
(PB-C-IN)
(PB-SW)
(ENV)
IC702
IC702 TMF687 (X731)
C.SYNC
SP
REC C
PB
PB C IN
PB 5V
ACK IN
VIDEO IN
GND
NTSC
PB C
SW 5V
CHECK 1
MESEC IN
CHECK 2
SECAM OUT
CHECK 3
CN802 4P
1 REC CUR
2 PB RF
3 RF SWP
4 GND
FOR CHECK
CN803 3P
1 PB RF
2 GND
3 REC RF
TO HF-34 BOARD CN103
CN001 15P
15 AF SWP
14 AF REC P
13 RP SP
12 REC P
11 ENV
10 GND (AU)
9 REC
8 12V
7 HEAD CONT
6 REC CUR.
5 C.ROT
4 ENV CONT
3 SECAM
2 ME SECAM
1 JOG
TO MA-202 BOARD (See page 4-23) CN303
CN002 20P
20 RF SWP
19 COMP SYNC
18 VIDEO (CCD) OUT
17 SW 5V
16 VIDEO IN
15 GND (SW)
14 VIDEO OUT
13 GND (SW)
12 Q.VD
11 V.PB
10 E TAPE
9 DATA
8 RENTAL
7 CLOCK
6 3.58MHz
5 NTSC
4 SHARPNESS
3 NT JUDGE
2 DRC ON
1 (LP JOG) PB
TO MA-202 BOARD (See page 4-23) CN304
CN003 5P
5 V.OUT
4 GND
3 SW 5V
2 VIDEO OUT
1 12V

MC-Service


19
20
21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
IC201
PAL/SECAM DISCRIMINATOR
BA7052F-E2
COMP-2
COMP-1
LIM-AMP
REG
SW
DET
N.C.
T201
Q027 UN2213 SWITCH
Q201 MS6601 INVERTER
IC003
1H CCD DELAY LINE
MSM7450MS
Q006, 007 L.P.F
Q006 MS6601
Q007 MSB709
IC002
SWITCH
NJM2234M
GND
Vcc
Q005 UN2213 TRAP
Q004 MS6601 BUFFER
Q003 MS6601 BUFFER
IC004
TC7S32F
Q018 UN2213 SWITCH
IC701
TA75S393F
AMP
BL001 N3.58
BL002 N4.43
BL003 PAL
Q011 MS6601 BUFFER
Q040 UN2213 SWITCH
Q051 UN2213 SWITCH
Q048 UN2213 SWITCH
Q047 UN2213 SWITCH
Q001 MS6601
Q002 MS6601
Q049 UN2213 SWITCH
Q041 UN2213 SWITCH
Q046 UN2213 SWITCH
Q001, 002 BUFFER
MAIN DE-EMPH.
SUB LPF
NOISE CANCEL
PICTURE CONT.
V APT
CLAMP
CLAMP
YNR
SQUELCH 6dB AMP
AGC
Y-VCC
N.L EMPH
N.L DE-EMPH
DETAIL ENHANCER (PB THROUGH)
Y-LPF
SYNC SEP
FBC
Y/C MIX
COLOR KILLER
BURST EMPH/DE-EMPH
3.58 MHz 4.43MHz BPF
3V REG.
MAIN EMPH
CARRIER OFFSET
W.C/D.C
FBC
GCA
LIM
MIX
SUB LIM
FM DEMOD.
DO 12 - 23H DET COUNTER
EDGE DELAY
MUTE
DOC
MOD
LPF
3M LPF
MAIN CONV.
DELAY 200ns 150ns 100ns
KILLER AMP (REC)
DOWN CONV.
PULSE GEN.
AGC DET.
ATT
N→P
P→N
C-GND
AUTO BALANCE
PB/REC DISCRI.
REC AFC
REC APC
PB APC
ACC
1/2 PHASE SW
4 PHASE GEN.
COLOR KILLER 1H DET
1/2 2fL VCO
CR DET 2fsc
1/2 CLOCK
X'tal VCO /OSC
SERIAL CONTROL INTERFACE
NTSC/PAL CONT.
ACC DET (BURST)
APC DET. AMP SW
ACC DET AMP SW
X001 4.43MHz
X002 3.58MHz
C.SYNC
Y.VCC
C.VCC
VIDEO-IN
VIDEO-OUT
MESEC-IN
ME-SECAM
SWSV
NTSC
DATA
CLK
Q.VD
3.58
JL072
JL082
JL083
JL084
JL085
JL086
V.OUT
GND
SW 5V
VIDEO OUT
12V
CN003 5P
CN002 20P
(LP JOG) PB
23)

No Mark:PAL REC (COMMON)
( ):PAL PB
[ ]:NTSC REC
≪ ≫:NTSC PB

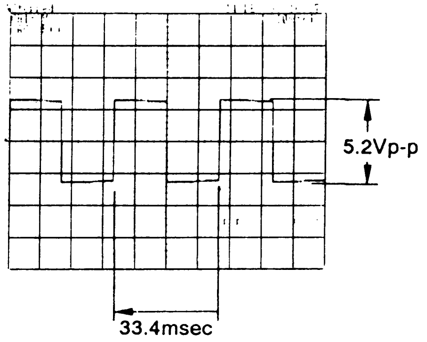
HEAD AMP, VIDEO

MA-202 (SERVO, SYSTEM CONTROL, NORMAL AUDIO), MF-245 (LINE IN 2) PRINTED WIR

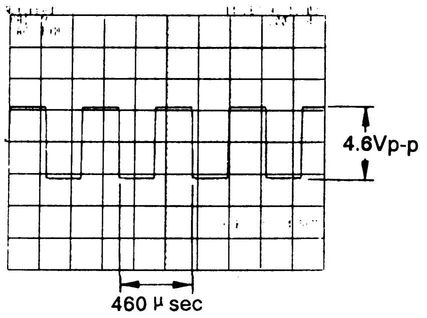
– Ref. No.: MA-202 Board; 2,000 series, MF-245 Board; 5,000 series –

MA-202 BOARD (NTSC 3.58 MODE)

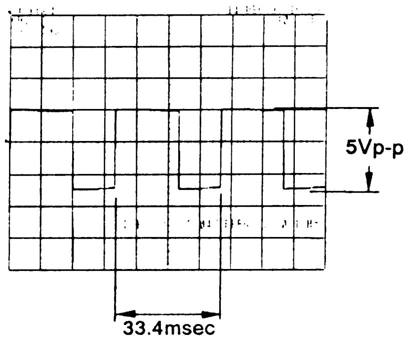
❶IC203① REC/PB



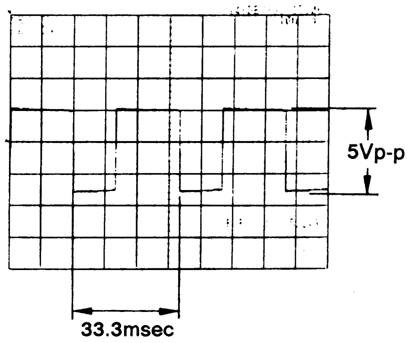
❽IC203⑳ REC/PB



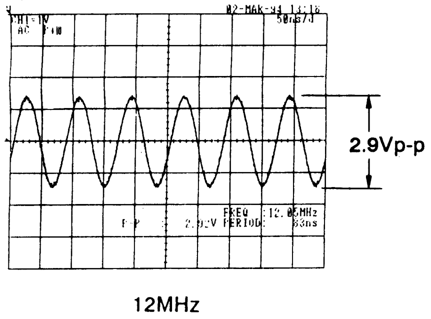
❷IC203⑦ REC



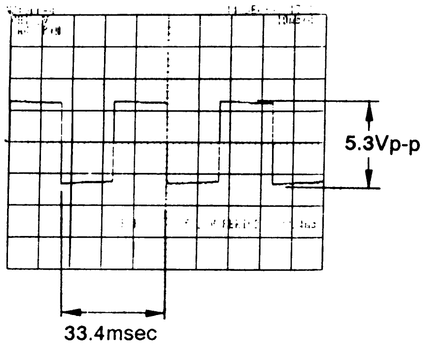
❾IC203⑰ REC/PB



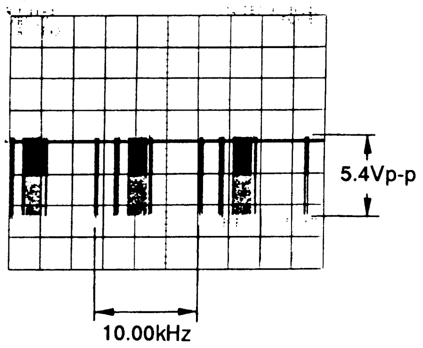
❸IC203㊷ REC/PB



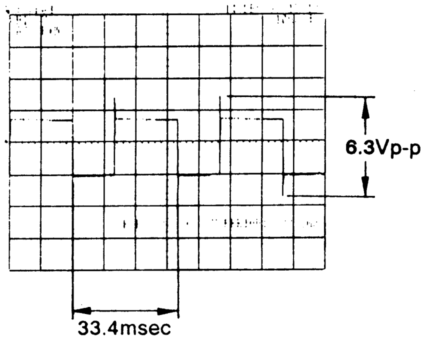
❿IC203⑩ REC/PB



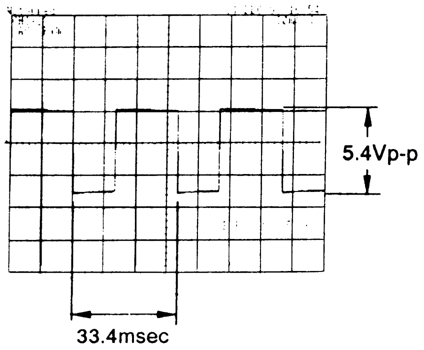
❹IC203㊼ REC/PB



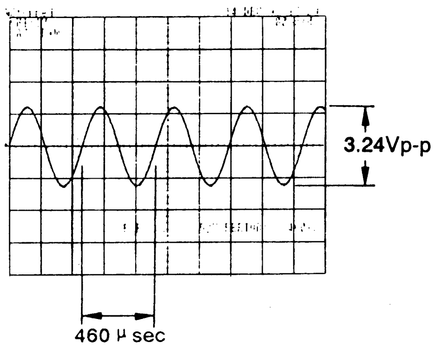
⓫IC101⑦ REC



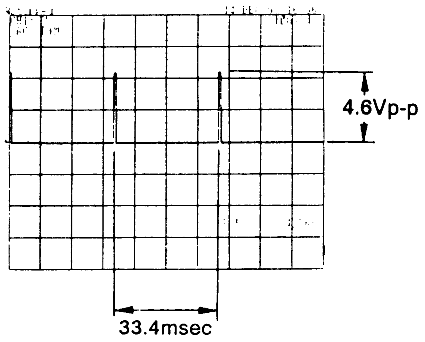
❺IC203㊽ PB



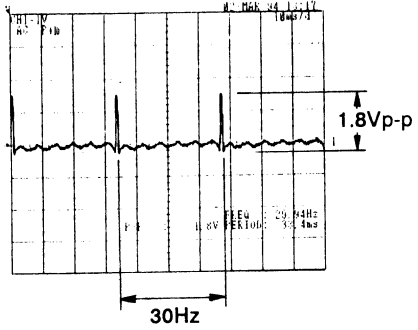
⓬IC101⑳ REC/PB



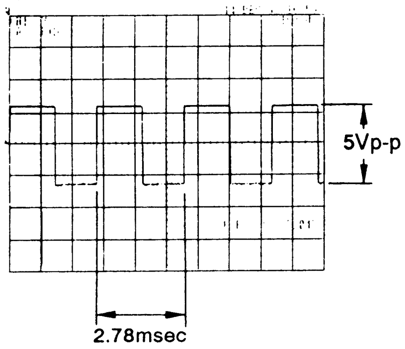
❻IC203㊽ REC/PB



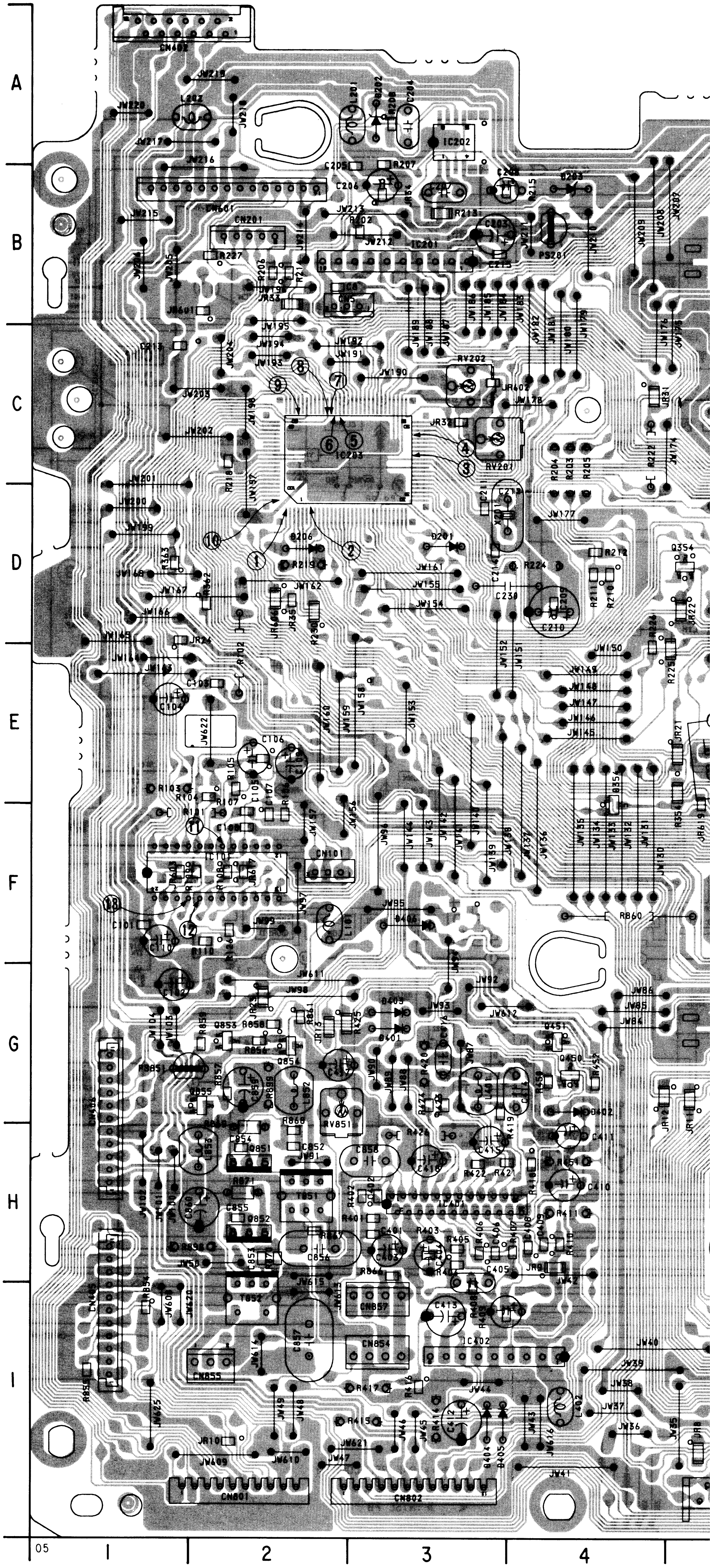
⓭IC101㉑ REC/PB

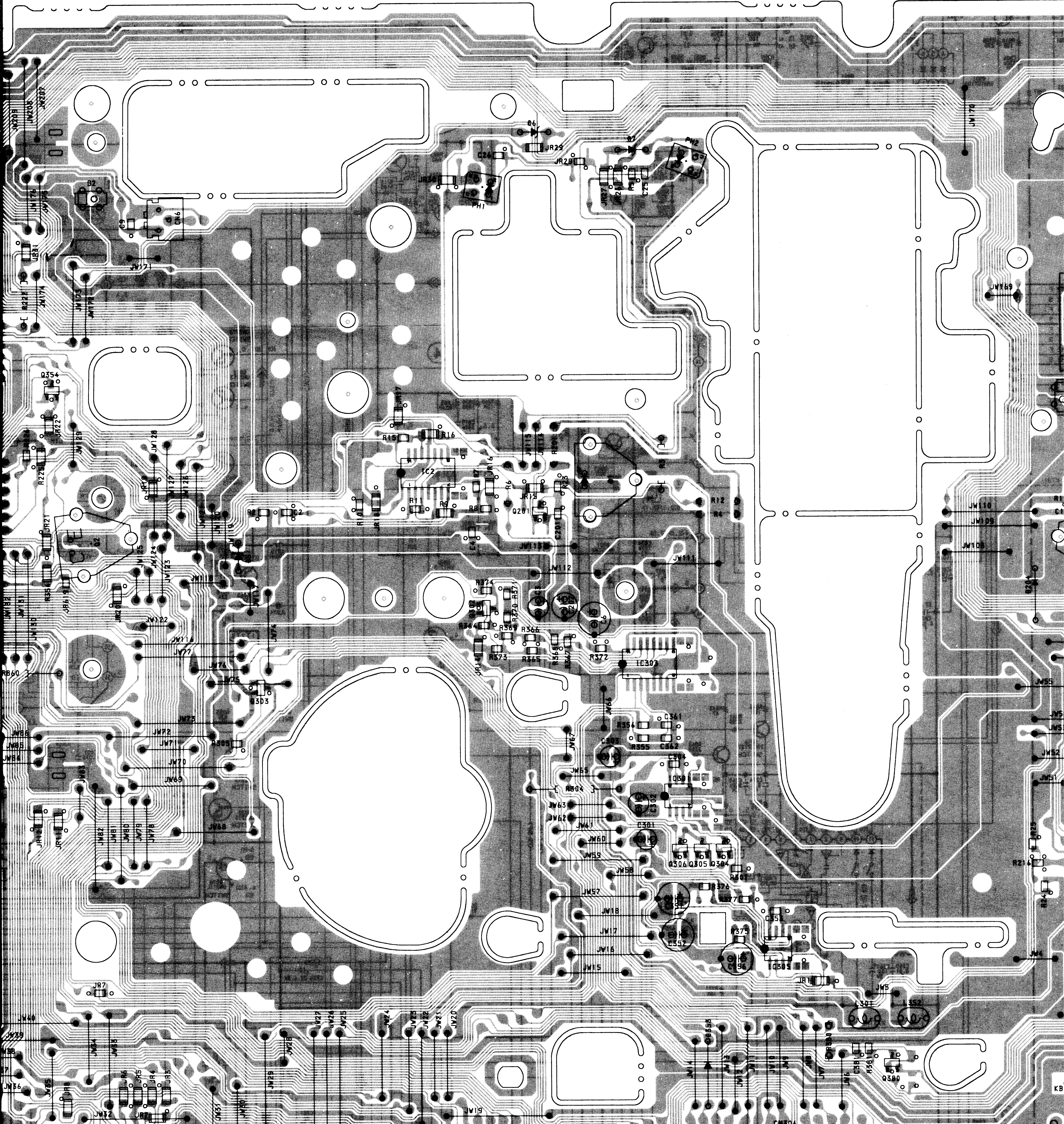


❼IC203㊾ REC/PB



MA-202 BOARD


A
B
C
D
E
F
G
H
I
05
1
2
3
4
CN402
CN601
CN201
IC202
IC201
IC203
PS201
RV202
RV201
CN101
IC101
RV851
IC401
IC402
CN857
CN854
CN855
CN801
CN802
T851
T852


JW208
JW209
JW210
JW170
D6
D7
JR29
JR28
C24
PH1
PH2
JR30
Q2
CN6
C9
JW171
JW174
JW173
JW172
JW169
Q354
JR22
JW129
JW128
JW127
JW126
R15
R16
IC2
R11
R9
R8
R6
R7
JR15
Q201
C201
R23
R12
R4
JW110
JW109
JW108
R101
R2
C2
JW119
JW118
JW113
JW112
JW111
JW122
JW116
JW77
JW76
JW75
JW74
JW73
JW72
JW71
JW70
JW69
JW68
R374
R371
R370
R369
R366
R364
R365
R373
R368
R372
IC303
Q303
R303
R305
JW66
JW67
JW65
R356
C361
C362
R355
C303
C304
IC301
R304
JW64
JW63
JW62
JW61
JW60
JW59
JW58
JW57
JW18
JW17
JW16
JW15
C301
C302
Q306
Q305
Q304
R301
R376
R377
C351
C352
R375
C353
IC305
L351
L352
JR14
JW5
JW4
JW55
JW52
JW51
R214
JW84
JW85
JW86
JW82
JW81
JW80
JW79
JW78
JR7
JW40
JW39
JW38
JW36
JW35
JW34
JW33
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JW19
JW14
JW13
JW12
JW11
JW10
JW9
JW8
JW7
JW6
C381
R381
Q380
CN303
CN305
CN304
RB60
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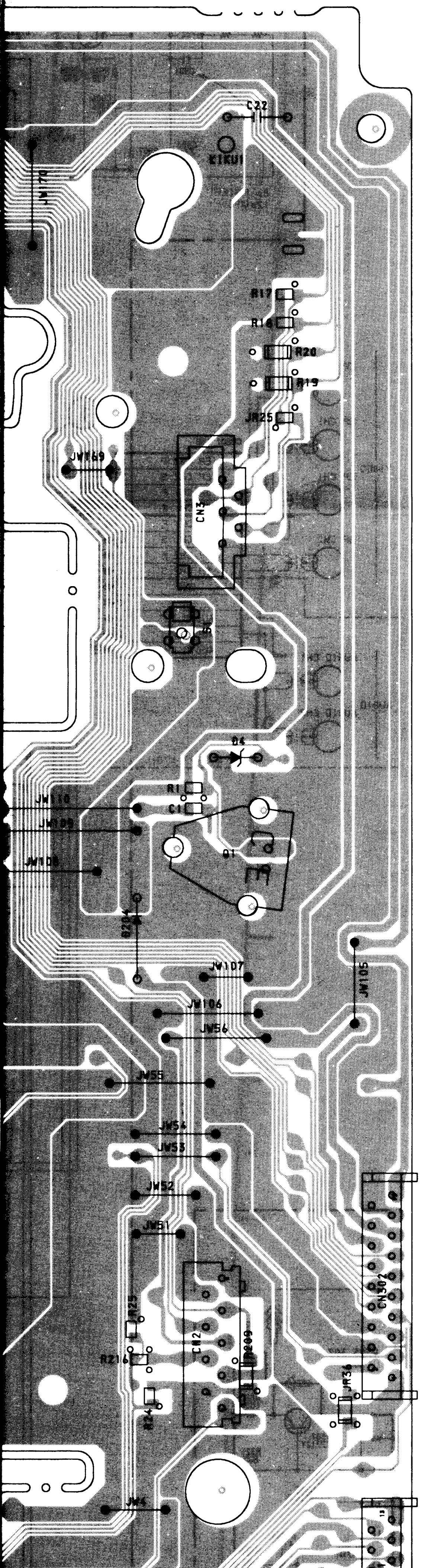
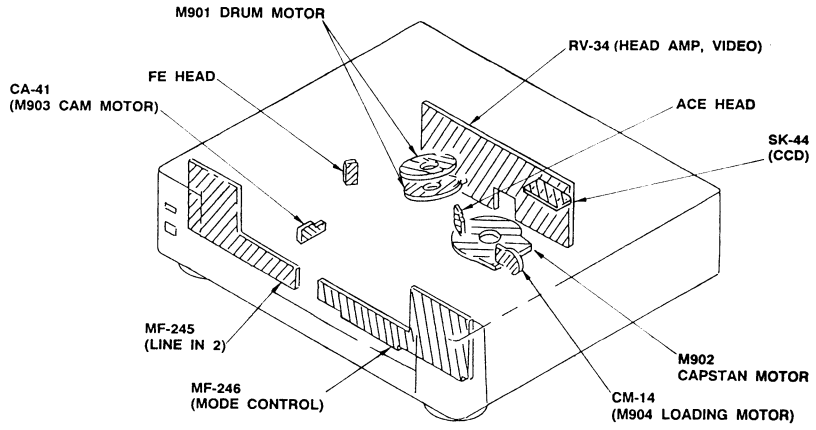
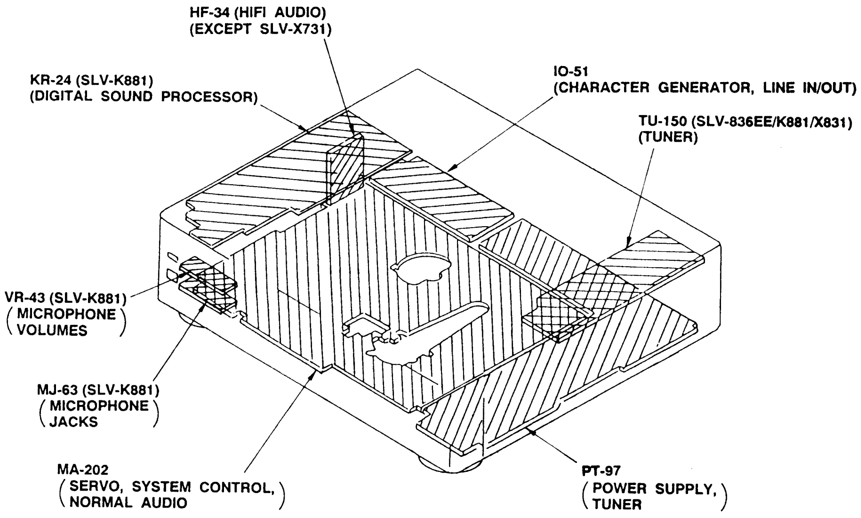
12


C22
R17
R14
R20
R19
JR25
CN3
JW169
JW110
JW129
JW108
R1
C1
Q1
D6
JW107
JW105
JW106
JW56
JW55
JW54
JW53
JW52
JW51
CN302
JR35
R25
R216
CN301
JW4
JW3
KB1
JW2
JW1
1-651-687-
11
12
13

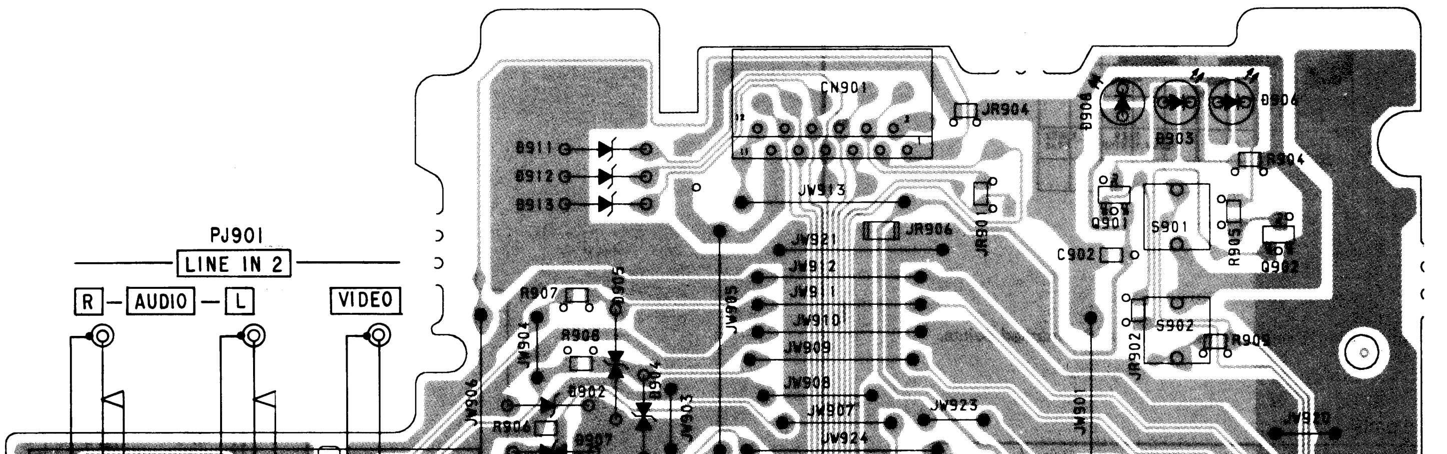
MA-202 BOARD

CN002	H-13
CN003	D-13
CN005	B-2
CN006	C-6
CN101	F-2
CN201	B-2
CN301	I-13
CN302	G-13
CN303	I-8
CN304	I-10
CN402	A-1
CN405	I-1
CN406	G-1
CN601	B-2
CN801	I-2
CN802	I-3
CN803	I-5
CN854	I-3
CN855	I-2
CN857	I-3
D001	E-9
D004	E-13
D005	E-6
D006	B-8
D007	B-9
D201	D-3
D202	A-3
D203	B-4
D204	F-12
D206	D-2
D353	I-10
D354	F-4
D401	G-3
D402	G-4
D403	G-3
D404	I-3
D405	I-3
D406	F-3
IC002	E-8
IC101	F-2
IC201	B-3
IC202	A-3
IC203	C-3
IC301	G-9
IC303	F-9
IC305	H-10
IC401	H-3
IC402	I-3
PH001	B-8
PH002	B-10
Q001	E-13
Q002	E-5
Q201	E-8
Q302	F-8
Q303	F-6
Q304	H-10
Q305	H-10
Q306	H-9
Q354	D-5
Q380	I-11
Q450	G-4
Q451	G-4
Q851	H-2
Q852	H-2
Q853	G-2
Q854	G-2
Q855	G-2


M901 DRUM MOTOR
RV-34 (HEAD AMP, VIDEO)
FE HEAD
CA-41
(M903 CAM MOTOR)
ACE HEAD
SK-44
(CCD)
MF-245
(LINE IN 2)
MF-246
(MODE CONTROL)
M902
CAPSTAN MOTOR
CM-14
(M904 LOADING MOTOR)

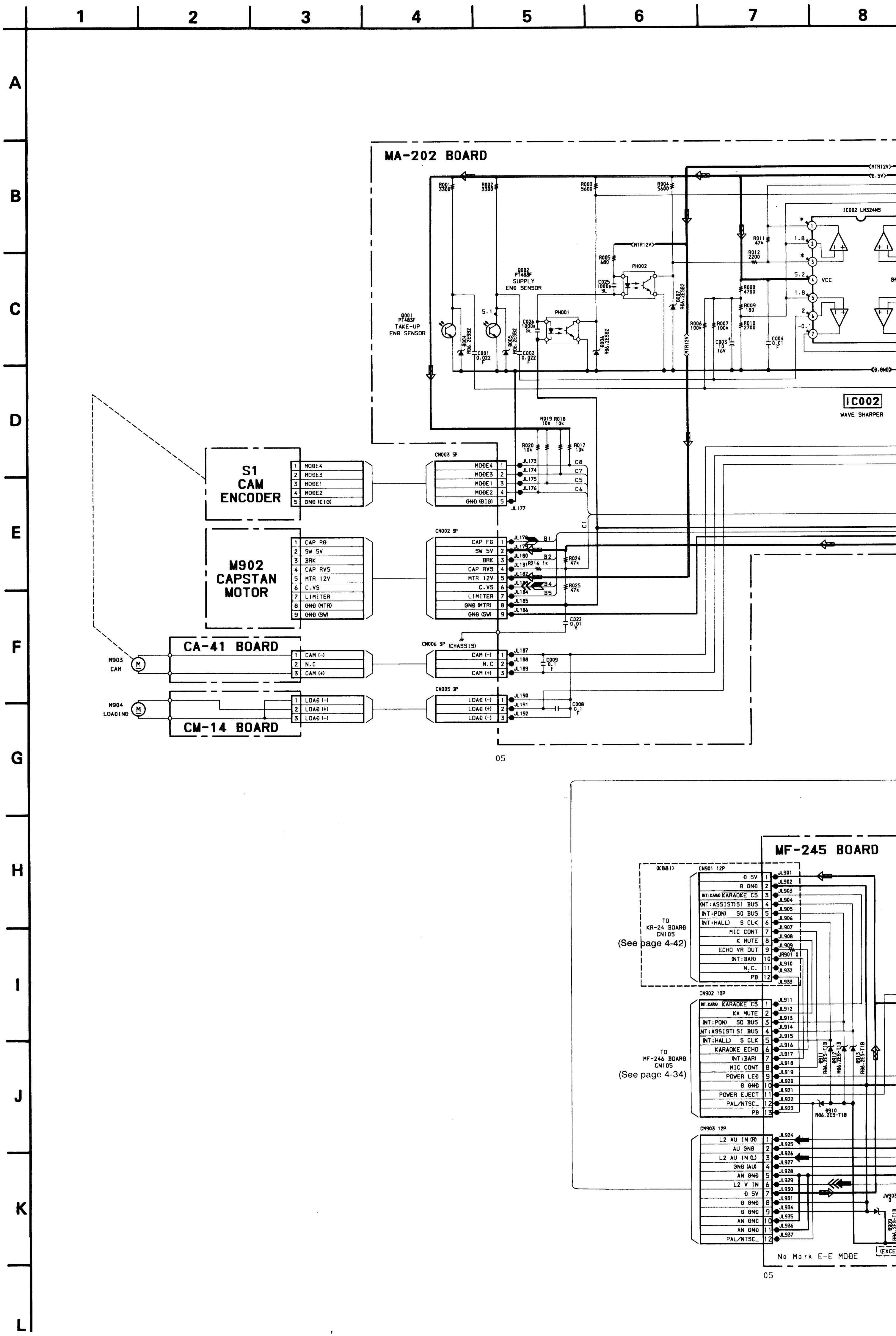

HF-34 (HIFI AUDIO)
(EXCEPT SLV-X731)
KR-24 (SLV-K881)
(DIGITAL SOUND PROCESSOR)
IO-51
(CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831)
(TUNER)
VR-43 (SLV-K881)
(MICROPHONE VOLUMES)
MJ-63 (SLV-K881)
(MICROPHONE JACKS)
MA-202
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97
(POWER SUPPLY, TUNER)

MF-245 BOARD


PJ901
LINE IN 2
R
AUDIO
L
VIDEO
CN901
JR904
D908
D906
D911
D912
D913
JW913
D903
R904
Q901
S901
C902
R901
Q902
JW921
JR906
JR901
JW912
JW911
JW910
JW909
JW908
JW907
JW923
JW924
JW901
JW902
S902
R905
R907
R908
D902
D907
R906
D904
JW904
JW905
JW903
JW906
JW918
JW919
JR903
JW920
JR905
CN903
CN902
D905
D910
JW914
JW916
JW922
JW917
1-651-691-
12
05

MA-202 (SERVO, SYSTEM CONTROL, NORMAL AUDIO), MF-245 (LINE IN 2) SCHEMATIC DIAGRAM

– Ref. No.: MA-202 Board; 2,000 series, MF-245 Board; 5,000 series –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A
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C
D
E
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I
J
K
L
MA-202 BOARD
IC002 LM324NS
IC002
WAVE SHARPER
Q001 PT483F TAKE-UP END SENSOR
Q002 PT483F SUPPLY END SENSOR
PH001
PH002
VCC
S1 CAM ENCODER
M902 CAPSTAN MOTOR
CA-41 BOARD
CM-14 BOARD
M903 CAM
M904 LOADING
CN003 5P
CN002 9P
CN006 3P (CHASSIS)
CN005 3P
MODE4
MODE3
MODE1
MODE2
GND (D10)
CAP FG
SW 5V
BRK
CAP RVS
MTR 12V
C.VS
LIMITER
GND (MTR)
GND (SW)
CAM (-)
N.C
CAM (+)
LOAD (-)
LOAD (+)
MF-245 BOARD
CN901 12P
CN902 13P
CN903 12P
TO KR-24 BOARD CN105
(See page 4-42)
TO MF-246 BOARD CN105
(See page 4-34)
No Mark E-E MODE
05

- ＊ : Impossible to measure the voltage at the marked points.

- Signal path

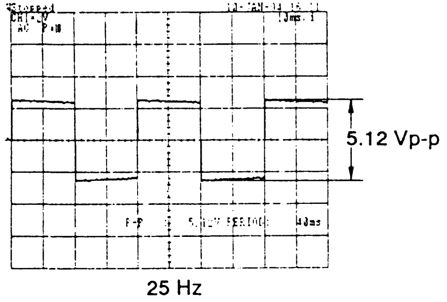
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

- Signal path

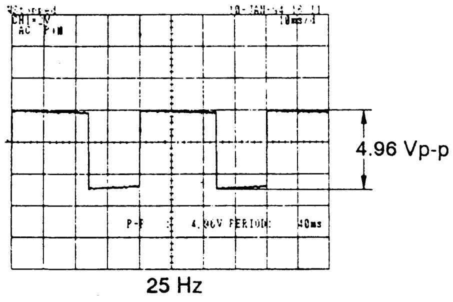
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷»	
Drum servo (speed and phase)		▷»»	
Capstan speed servo		⊃	
Capstan phase servo	➤»	⊃»	ᐅ»
Capstan servo (speed and phase)		⊃»»	
Ref. signal	➤		ᐅ

MA-202 BOARD (PAL MODE)

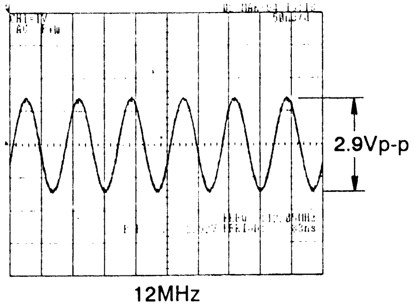
❶IC203 ① REC/PB



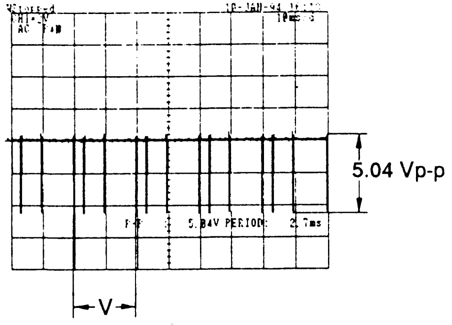
❷IC203 ⑦ REC



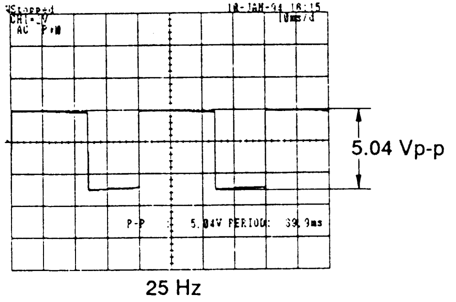
❸ IC203 (42) REC/PB



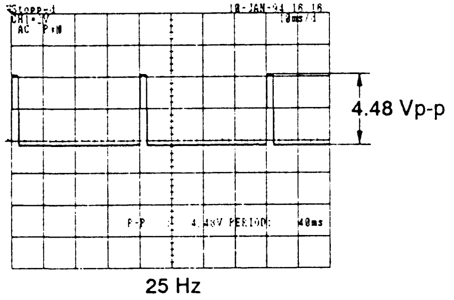
❹IC203 (47) REC/PB



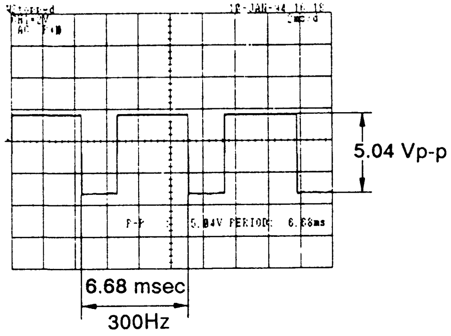
❺IC203 (67) PB



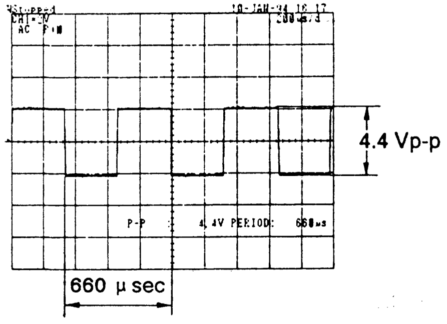
❻IC203 (68) REC/PB



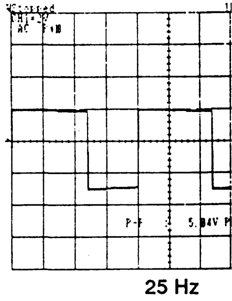
❼IC203 (69) REC/PB



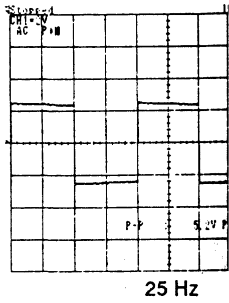
❽IC203 (70) REC/PB

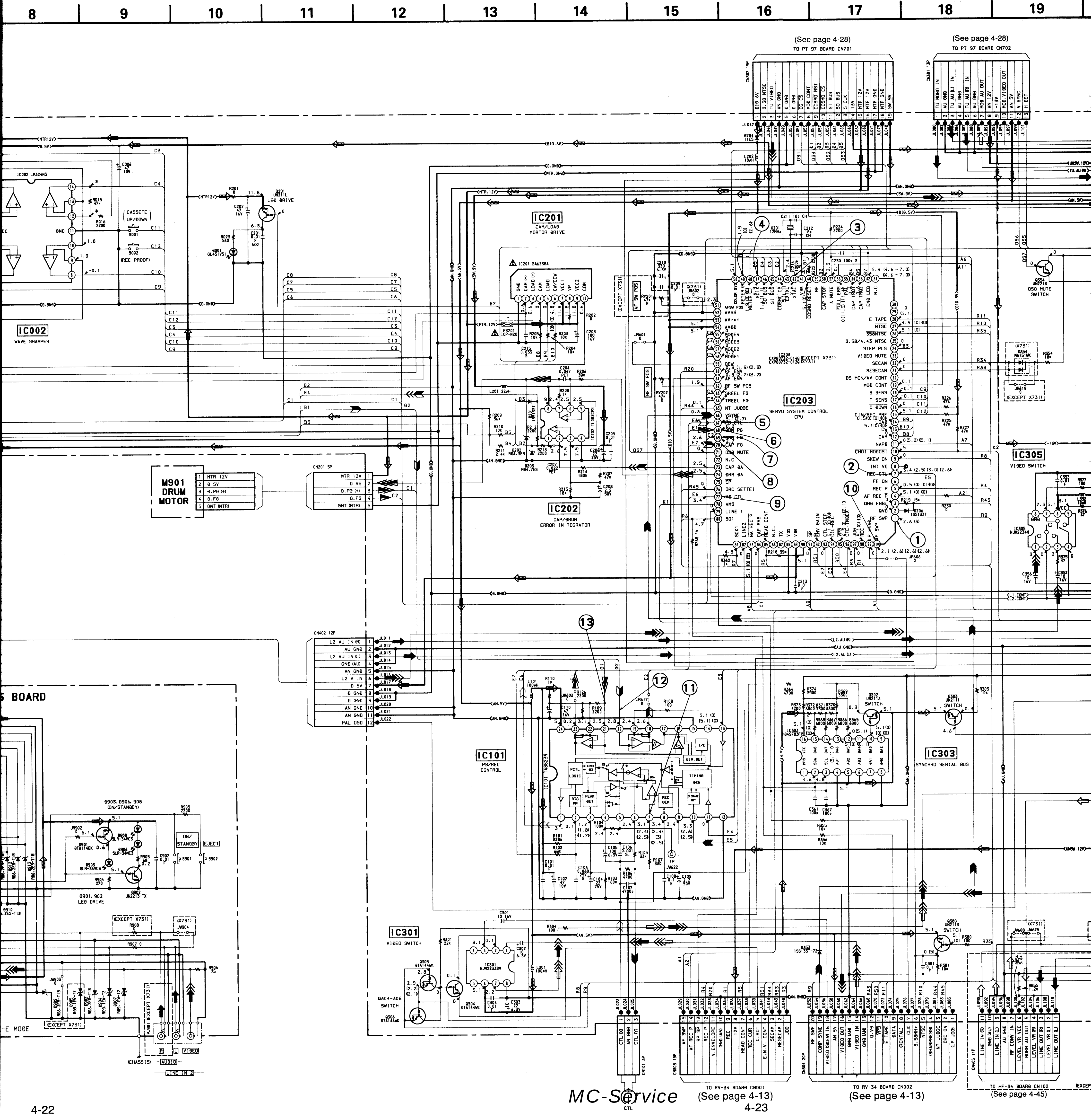


❾IC203 (77) REC/PB



❿IC203 (100) REC/PB

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19
(See page 4-28)
TO PT-97 BOARD CN701
(See page 4-28)
TO PT-97 BOARD CN702
CN302 15P
CN301 13P
IC002 LM324NS
IC002
WAVE SHAPER
CASSETE UP/DOWN
S001
S002
REC PROOF
Q201 UN211L
LED DRIVE
D001 GL451YS
IC201
CAM/LOAD MORTOR DRIVE
IC201 BA6238A
IC202
CAP/DRUM ERROR INTEGRATOR
IC203
SERVO SYSTEM CONTROL CPU
X201 12MHz
M901 DRUM MOTOR
MTR 12V
B 5V
D.PG (+)
D.FG
DNT (MTR)
CN201 5P
CN402 12P
L2 AU IN (R)
AU GND
L2 AU IN (L)
GND (AU)
AN GND
L2 V IN
B 5V
D GND
AN GND
PAL OSD
IC101
PB/REC CONTROL
IC101 LA7282M
IC301
VIDEO SWITCH
IC301 NJM2233BM
Q304-306 SWITCH
IC303
SYNCHRO SERIAL BUS
IC303 M64787P
Q302 UN2113 SWITCH
Q303 UN2111 SWITCH
Q380 UN2213 SWITCH
IC305
VIDEO SWITCH
Q354 UN2213
OSD MUTE SWITCH
S BOARD
Q903, Q904, Q908 (ON/STANDBY)
ON/STANDBY
EJECT
S901
S902
Q901, 902 LED DRIVE
EXCEPT X731
X731
-E MODE
(CHASSIS)
AUDIO
LINE IN 2
R
L
VIDEO
CN101 5P
CTL (X)
AN GND
CTL (Y)
CTL
CN303 15P
TO RV-34 BOARD CN001
(See page 4-13)
CN304 20P
TO RV-34 BOARD CN002
(See page 4-13)
CN405 11P
TO HF-34 BOARD CN102
(See page 4-45)
①
②
③
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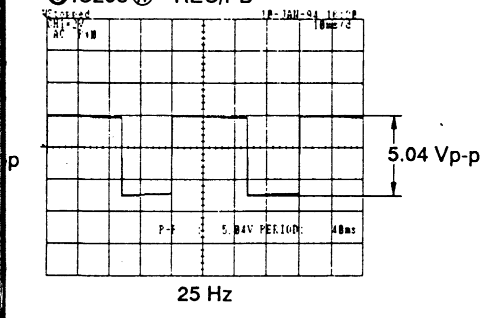
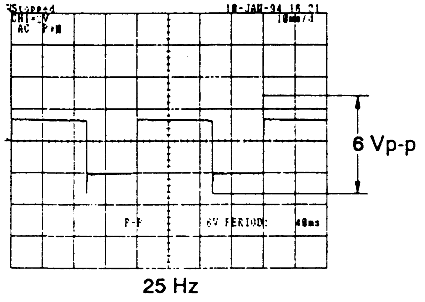
⑪
⑫
⑬

MC-Service

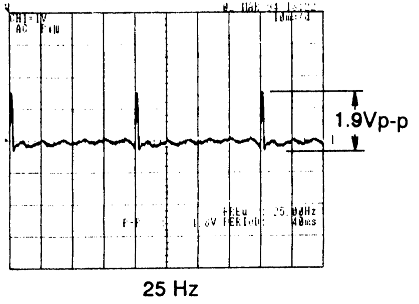
⑨IC203⑦ REC/PB



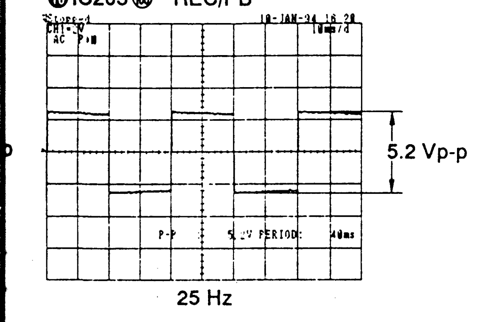
⑪IC101⑦ REC



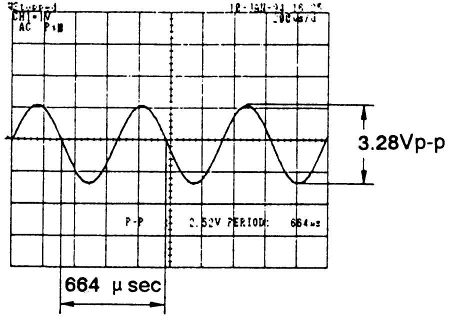
⑬IC101㉑ REC/PB

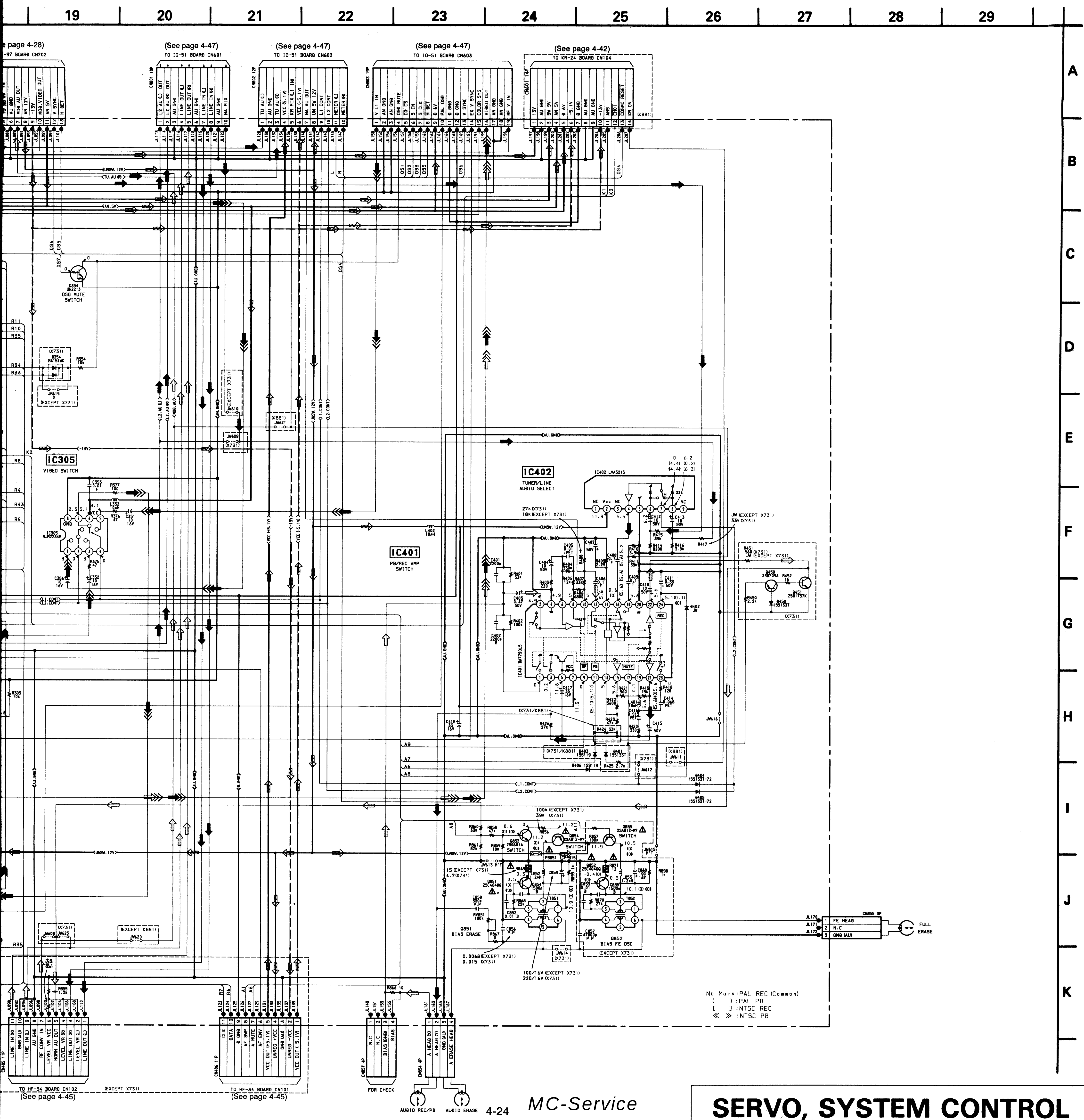


⑩IC203⑩ REC/PB



⑫IC101⑳ REC/PB

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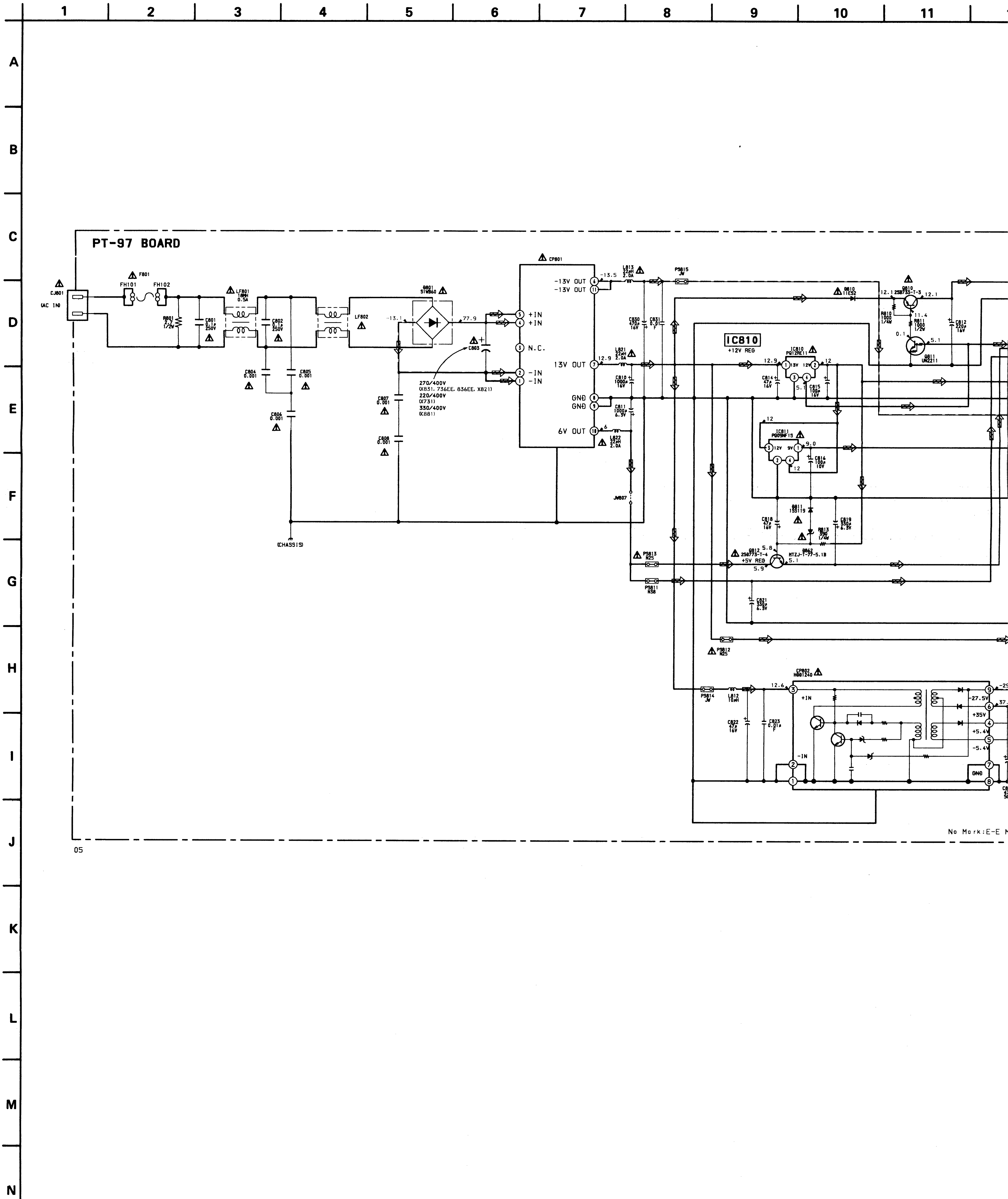
K
(See page 4-47)
TO IO-51 BOARD CN601
(See page 4-47)
TO IO-51 BOARD CN602
(See page 4-47)
TO IO-51 BOARD CN603
(See page 4-42)
TO KR-24 BOARD CN104
Q354 UN2213 OSD MUTE SWITCH
IC305 VIDEO SWITCH
IC305 NJM2234M
IC401 PB/REC AMP SWITCH
IC401 BA7750LS
IC402 TUNER/LINE AUDIO SELECT
IC402 LVA5215
Q450 2SB709A
Q451 2SD1757K
Q853 2SB601A SWITCH
Q854 2SA812-M7 SWITCH
Q855 2SA812-M7 SWITCH
Q851 2SC4040Q BIAS ERASE
Q852 2SC4040Q BIAS FE OSC
CN855 3P
FE HEAD
N.C
GND (AU)
FULL ERASE
TO HF-34 BOARD CN102
(See page 4-45)
TO HF-34 BOARD CN101
(See page 4-45)
FOR CHECK
AUDIO REC/PB
AUDIO ERASE
No Mark : PAL REC (Common)
( ) : PAL PB
[ ] : NTSC REC
《 》 : NTSC PB

MC-Service

SERVO, SYSTEM CONTROL

PT-97 (POWER SUPPLY, TUNER) SCHEMATIC DIAGRAM

– Ref. No.: PT-97 Board; 3,000 series –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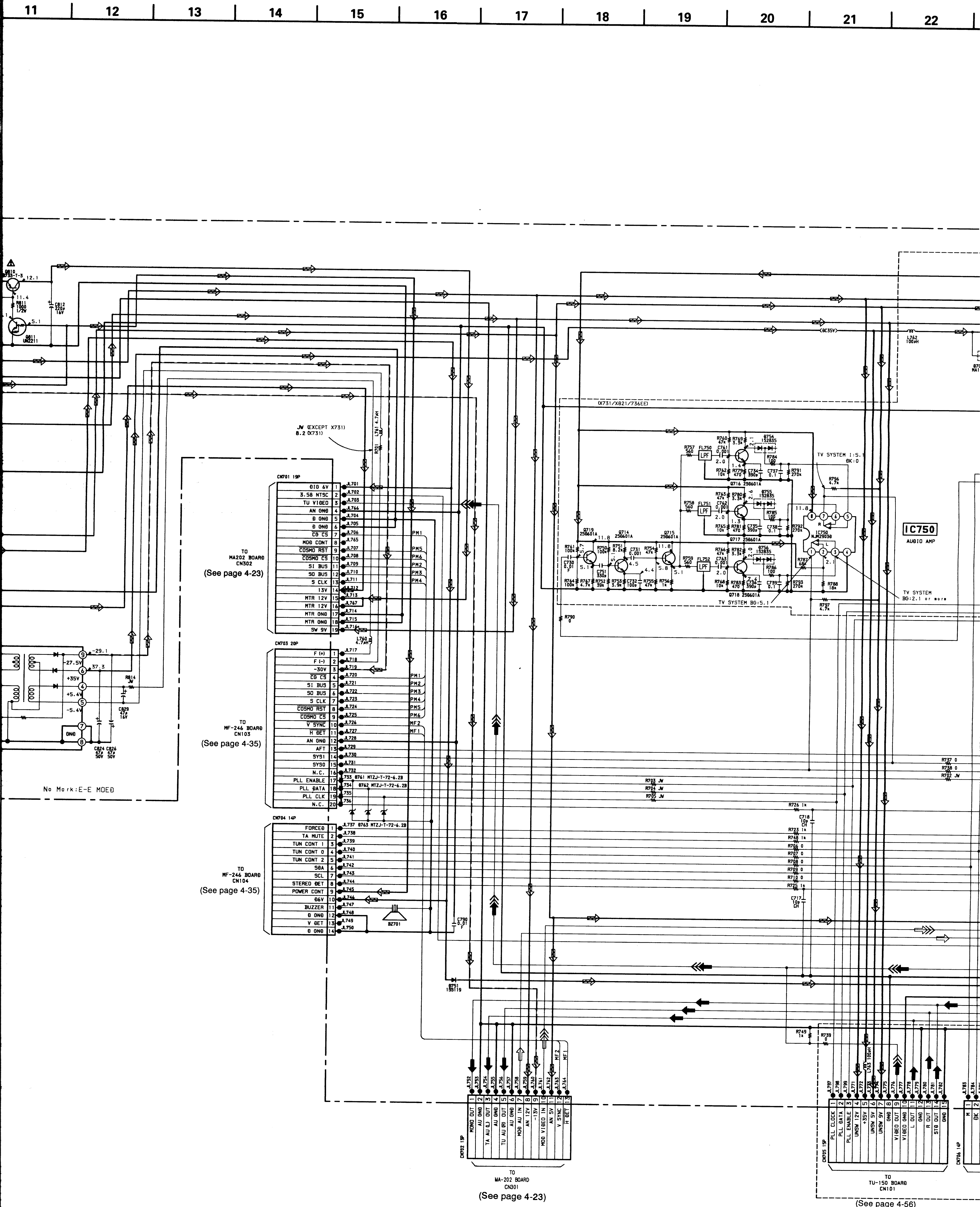
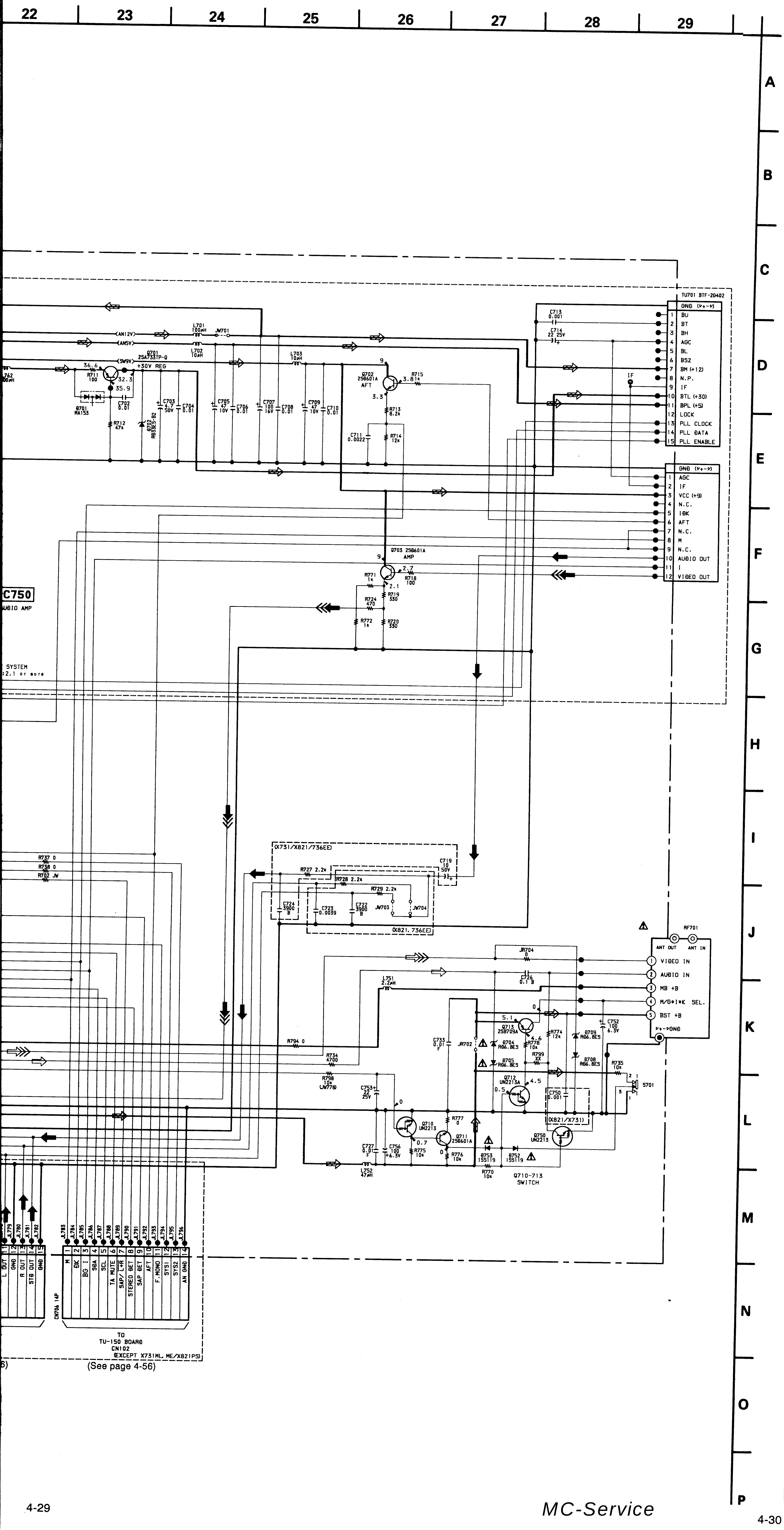
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
PT-97 BOARD
CJ801
(AC IN)
F801
FH101
FH102
R801 2.7 1/2W
C801 0.1μ 250V
LF801 18MH 0.5A
C802 0.1μ 250V
C804 0.001
C805 0.001
C806 0.001
(CHASSIS)
LF802
-13.1
D801 S1WB60
77.9
C803
270/400V (X831, 736EE, 836EE, X821)
220/400V (X731)
330/400V (K881)
C807 0.001
C808 0.001
CP801
-13V OUT
-13V OUT
+IN
+IN
N.C.
13V OUT
-IN
-IN
GND
GND
6V OUT
-13.5
L813 22μH 2.0A
PS815 JW
C830 470μ 16V
C831 0.01 F
12.9
L821 22μH 2.0A
C810 1000μ 16V
C811 1000μ 6.3V
6
L822 22μH 2.0A
JW807
D810 11ES2
12.1
Q810 2SB733-T-3
12.1
R810 1000 1/4W
11.4
R811 1000 1/2W
0.1
5.1
Q811 UN2211
C812 220μ 16V
IC810
+12V REG
IC810 PQ12RE11
12.9
13V
12V
12
C814 47μ 16V
5.1
C815 100μ 16V
12
IC811 PQ09NF15
12V
9V
9.0
C816 100μ 10V
12
D811 1SS119
C818 47μ 16V
C819 330μ 6.3V
R813 390 1/4W
5.8
Q812 2SB773-T-4
+5V REG
5.9
D862 MTZJ-T-77-5.1B
5.1
PS813 N25
PS811 N38
C821 330μ 6.3V
PS812 N25
CP802 H001240
PS814 JW
L812 10μH
12.6
C822 47μ 16V
C823 0.01μ F
+IN
-IN
GND
-27.5V
+35V
+5.4V
-5.4V
No Mark:E-E
05


11
12
13
14
15
16
17
18
19
20
21
22
JW (EXCEPT X731)
8.2 (X731)
(X731/X821/736EE)
CN701 19P
DIG 6V
3.58 NTSC
TU VIDEO
AN GND
D GND
D GND
CD CS
MOD CONT
COSMO RST
COSMO CS
SI BUS
SO BUS
S CLK
13V
MTR 12V
MTR 12V
MTR GND
MTR GND
SW 9V
TO
MA202 BOARD
CN302
(See page 4-23)
CN703 20P
F (+)
F (-)
-30V
CD CS
SI BUS
SO BUS
S CLK
COSMO RST
COSMO CS
V SYNC
H DET
AN GND
AFT
SYS1
SYS0
N.C.
PLL ENABLE
PLL DATA
PLL CLK
N.C.
TO
MF-246 BOARD
CN103
(See page 4-35)
CN704 14P
FORCED
TA MUTE
TUN CONT 1
TUN CONT 0
TUN CONT 2
SDA
SCL
STEREO DET
POWER CONT
D6V
BUZZER
D GND
V DET
D GND
TO
MF-246 BOARD
CN104
(See page 4-35)
BZ701
No Mark:E-E MODE
IC750
AUDIO AMP
IC750
NJM2903D
TV SYSTEM I:5.1
DK:0
TV SYSTEM BG:5.1
TV SYSTEM
BG:2.1 or more
LPF
FL750
FL751
FL752
Q714 2SD601A
Q715 2SD601A
Q716 2SD601A
Q717 2SD601A
Q718 2SD601A
Q719 2SD601A
Q810
Q811 UN2211
(BC35V)
L762 100μH
CN702 13P
MONO OUT
AU GND
TA AU (L) OUT
AU GND
TU AU (R) OUT
AU GND
MOD AU IN
AN 12V
-13V
MOD VIDEO IN
AN 5V
V SYNC
H DET
TO
MA-202 BOARD
CN301
(See page 4-23)
CN705 15P
PLL CLOCK
PLL DATA
PLL ENABLE
UNSW 12V
+35V
UNSW 5V
UNSW 9V
GND
VIDEO OUT
VIDEO GND
L OUT
GND
R OUT
GND
STD OUT
TO
TU-150 BOARD
CN101
(See page 4-56)
CN706 14P
D751 1SS119
C790 0.01 F
R703 JW
R704 JW
R705 JW
R737 0
R738 0
R702 JW
R726 1k
R749 1k
R739 0
R790 0


22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
TU701 BTF-20402
GND (V+-V)
BU
BT
BH
AGC
BL
BS2
BM (+12)
N.P.
IF
BTL (+30)
BPL (+5)
LOCK
PLL CLOCK
PLL DATA
PLL ENABLE
AGC
IF
VCC (+9)
N.C.
IOK
AFT
N.C.
M
N.C.
AUDIO OUT
I
VIDEO OUT
Q702 2SB601A AFT
Q703 2SB601A AMP
Q701 2SA733TP-Q +30V REG
IC750
AUDIO AMP
SYSTEM
(X731/X821/736EE)
(X821, 736EE)
RF701
ANT OUT
ANT IN
VIDEO IN
AUDIO IN
MB +B
M/G*I*K SEL.
BST +B
Q710-713
SWITCH
(X821/X731)
L OUT
GND
R OUT
STG OUT
GND
M
DK
BG
SDA
SCL
TA MUTE
SAP/ L+R
STEREO DET
SAP DET
AFT
F.MONO
SYS1
SYS2
AN GND
CN704 14P
TO
TU-150 BOARD
CN102
(EXCEPT X731ML, ME/X821PS)
(See page 4-56)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- * : Impossible to measure the voltage at the marked points.
- Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

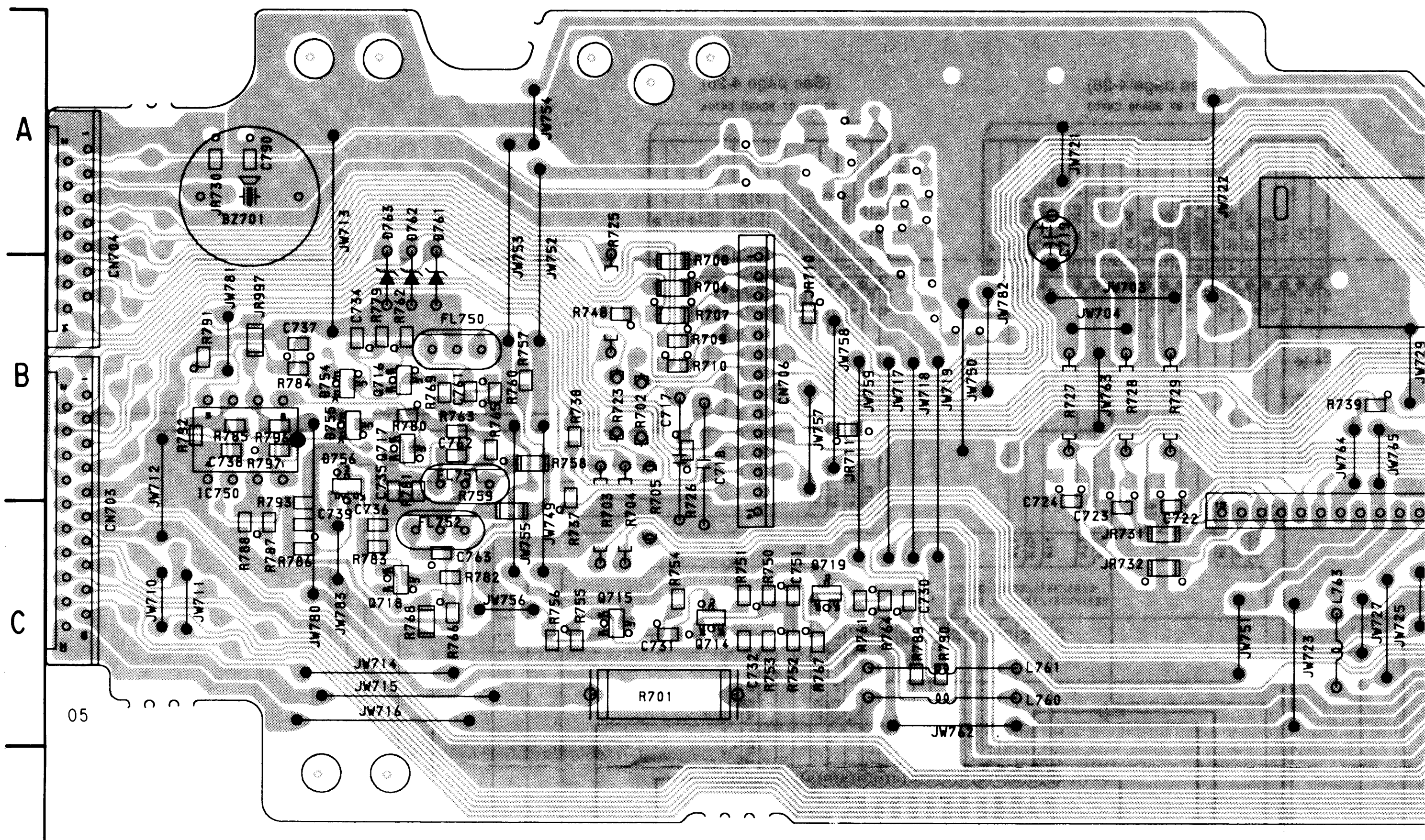
PT-97 (POWER SUPPLY, TUNER) PRINTED WIRING BOARD

– Ref. No.: PT-97 Board; 3,000 series –

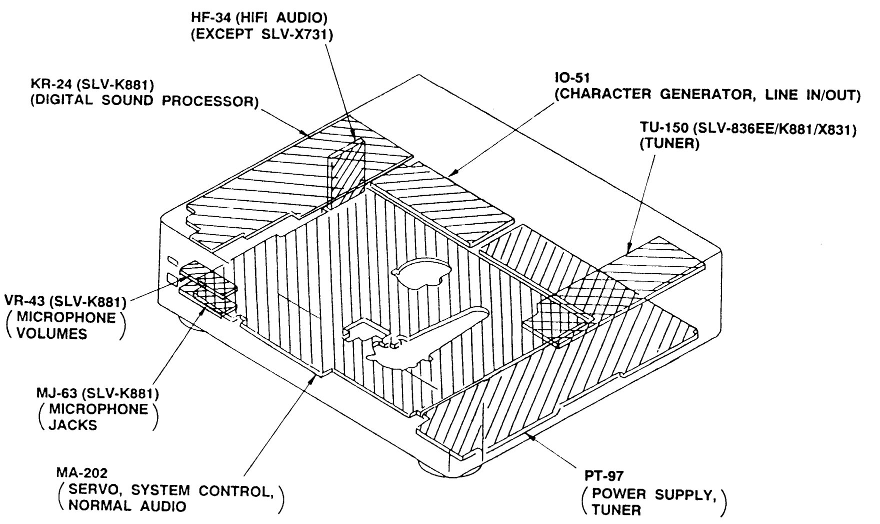
PT-97 BOARD

CN701	C-7
CN702	C-9
CN703	B-1
CN704	A-1
CN705	C-6
CN706	B-3
D701	A-12
D702	B-10
D704	A-12
D705	A-12
D708	A-12
D709	A-12
D751	C-12
D752	C-13
D753	C-13
D754	B-2
D755	B-2
D756	B-2
D761	B-2
D762	B-2
D763	B-2
D801	H-11
D810	F-12
D811	E-11
D862	E-11
IC750	B-1
IC810	E-11
IC811	E-11
Q701	B-12
Q702	B-8
Q703	B-7
Q710	B-13
Q711	B-13
Q712	B-12
Q713	B-13
Q714	C-3
Q715	C-3
Q716	B-2
Q717	B-2
Q718	C-2
Q719	C-4
Q810	F-11
Q811	F-11
Q812	C-12

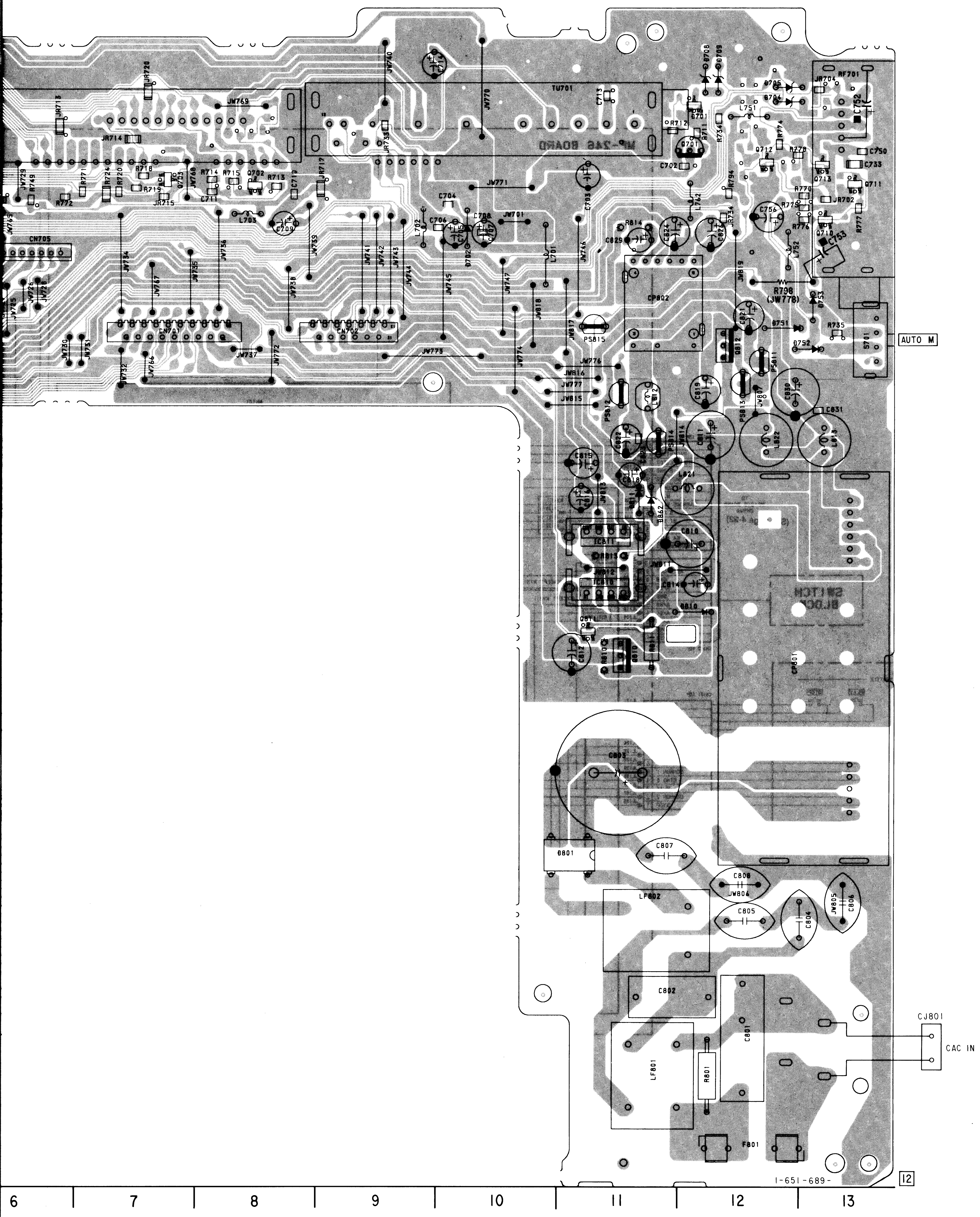
PT-97 BOARD



A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
CN704
CN703
BZ701
C790
JR730
JW713
JW753
JW752
JW754
FL750
FL751
FL752
IC750
JW712
JW710
JW711
JW714
JW715
JW716
JW756
JW780
JW783
CN706
R701
R748
JW758
JW757
JW759
JW717
JW718
JW719
JW790
JW782
JW721
JW722
JW704
JW703
L761
L760
JW762
JW751
JW723
JW727
JW725
R739
C724
C723
C722
JR751
JR732
05

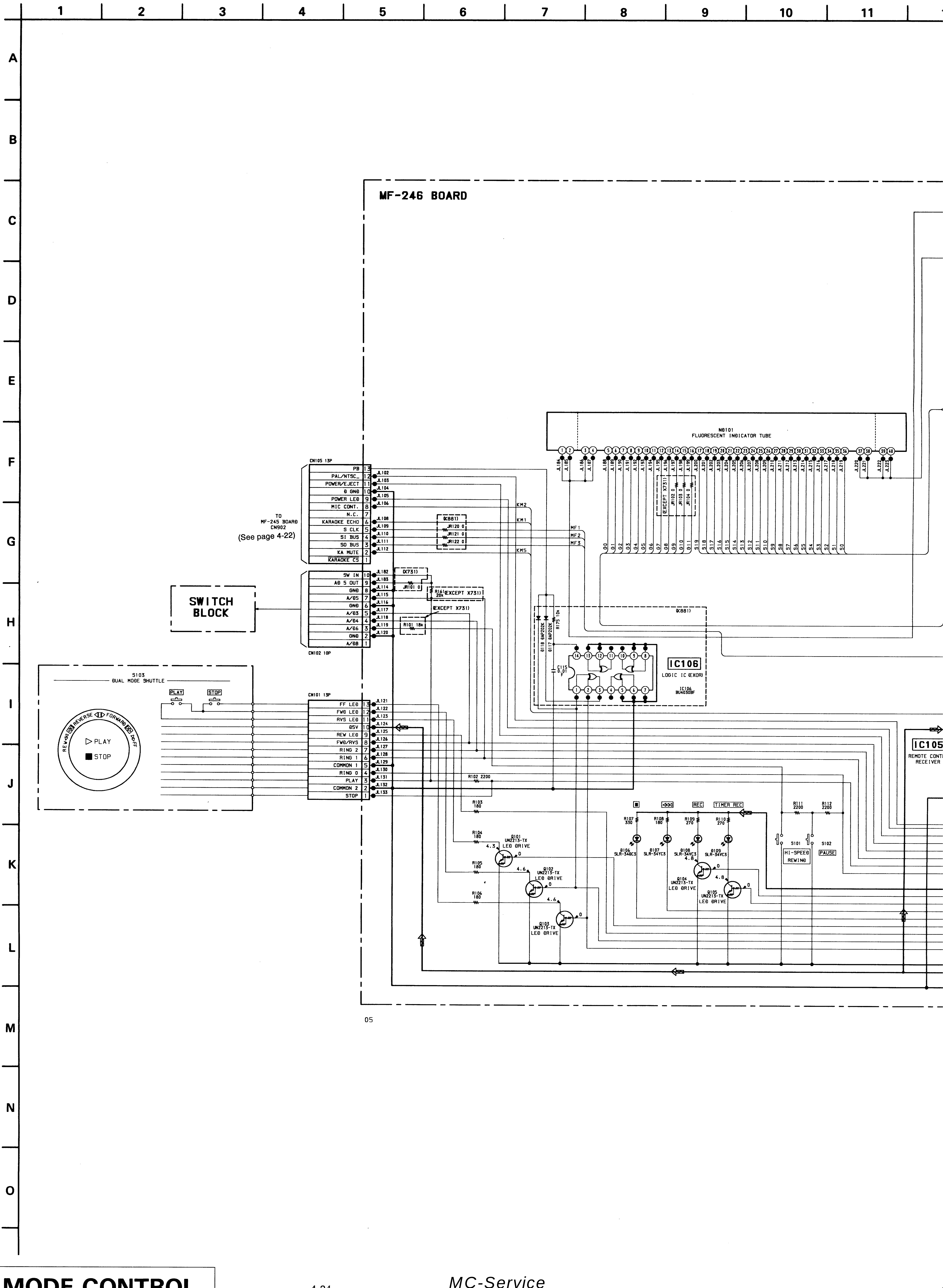


HF-34 (HIFI AUDIO)
(EXCEPT SLV-X731)
KR-24 (SLV-K881)
(DIGITAL SOUND PROCESSOR)
IO-51
(CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831)
(TUNER)
VR-43 (SLV-K881)
(MICROPHONE VOLUMES)
MJ-63 (SLV-K881)
(MICROPHONE JACKS)
MA-202
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97
(POWER SUPPLY, TUNER)


TU701
MP-246 BOARD
CN701
CN702
CN705
CP802
CP801
SWITCH BLOCK
IC811
IC810
PS815
PS812
PS813
PS814
PS811
S701
AUTO M
R798
(JW778)
C803
D801
C807
C808
JW806
C805
C804
JW805
C806
LF802
C802
C801
LF801
R801
F801
CJ801
CAC IN
1-651-689-
12
6
7
8
9
10
11
12
13

MF-246 (MODE CONTROL) SCHEMATIC DIAGRAM

– Ref. No.: MF-246 Board; 5,000 series –


1
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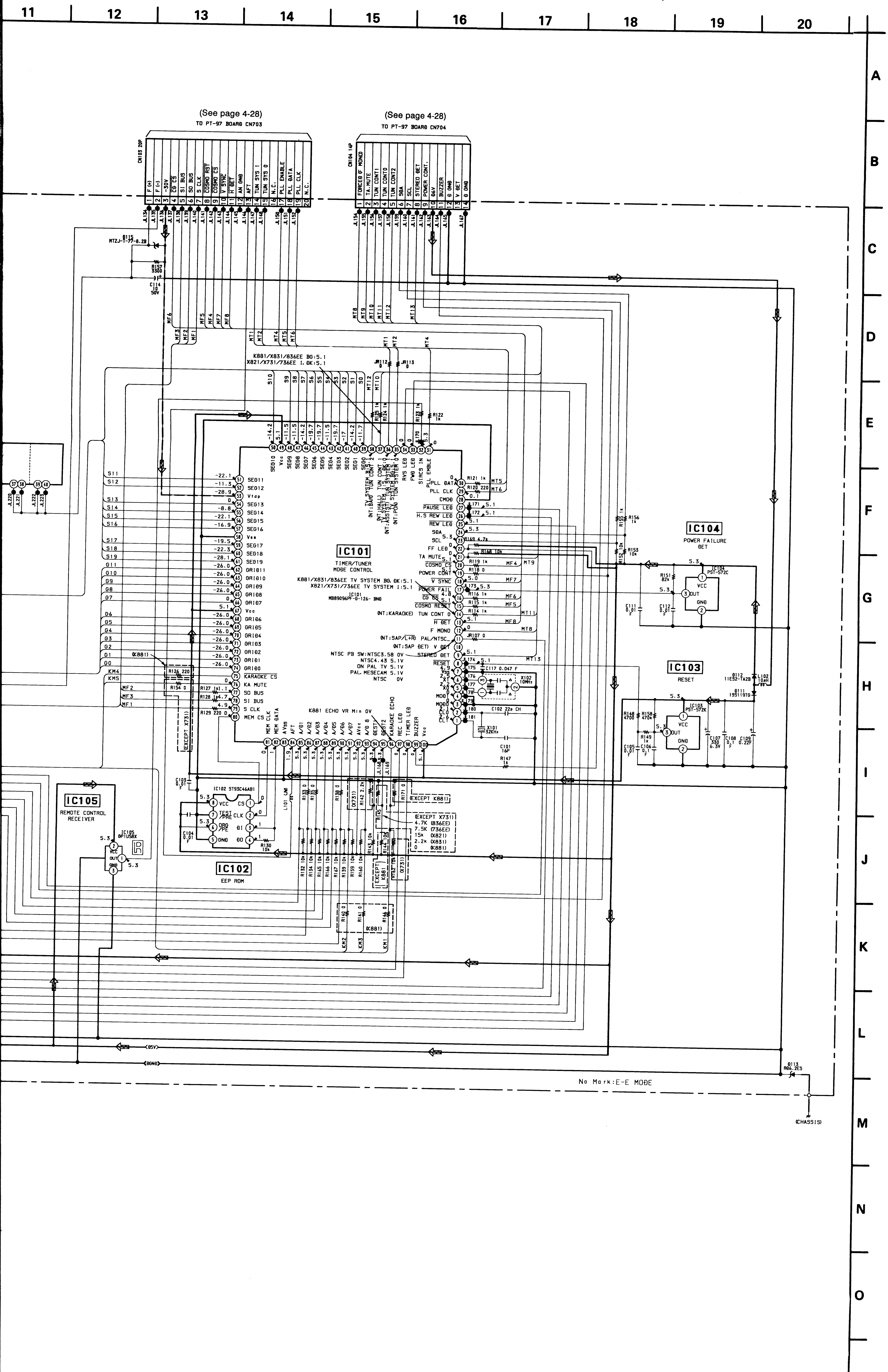
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
MF-246 BOARD
CN105 13P
PB 13
PAL/NTSC_ 12
POWER/EJECT 11
D GND 10
POWER LED 9
MIC CONT. 8
N.C. 7
KARAOKE ECHO 6
S CLK 5
SI BUS 4
SO BUS 3
KA MUTE 2
KARAOKE CS 1
TO
MF-245 BOARD
CN902
(See page 4-22)
JL102
JL103
JL104
JL105
JL106
JL108
JL109
JL110
JL111
JL112
(K881)
JR120 0
JR121 0
JR122 0
KM2
KM1
MF1
MF2
MF3
KM5
SWITCH
BLOCK
SW IN 10
AD 5 OUT 9
GND 8
A/D5 7
GND 6
A/D3 5
A/D4 4
A/D6 3
GND 2
A/D8 1
CN102 10P
JL182
JL183
JL114
JL115
JL116
JL117
JL118
JL119
JL120
(X731)
JR101 0
R161 20k
(EXCEPT X731)
(EXCEPT X731)
R101 18k
S103
DUAL MODE SHUTTLE
PLAY
STOP
REVERSE
FORWARD
REW
FF
PLAY
STOP
CN101 13P
FF LED 13
FWD LED 12
RVS LED 11
D5V 10
REW LED 9
FWD/RVS 8
RING 2 7
RING 1 6
COMMON 1 5
RING 0 4
PLAY 3
COMMON 2 2
STOP 1
JL121
JL122
JL123
JL124
JL125
JL126
JL127
JL128
JL129
JL130
JL131
JL132
JL133
ND101
FLUORESCENT INDICATOR TUBE
JL184
JL185
JL186
JL187
JL188
JL189
JL190
JL191
JL192
JL193
JL194
JL195
JL196
JL197
JL198
JL199
JL200
JL201
JL202
JL203
JL204
JL205
JL206
JL207
JL208
JL209
JL210
JL211
JL212
JL213
JL214
JL215
JL216
JL217
JL218
JL219
JL220
JL221
JL222
JL223
(EXCEPT X731)
JR102 0
JR103 0
JR104 0
G0
G1
G2
G3
G4
G5
G6
G7
G8
G9
G10
G11
S19
S18
S17
S16
S15
S14
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
(K881)
D118 DAP202K
D117 DAP202K
R175 10k
C115
0.01
F
IC106
LOGIC IC (EXOR)
IC106
BU4030BF
IC105
REMOTE CONT
RECEIVER
R102 2200
R103
180
R104
180
R105
180
R106
180
Q101
UN2213-TX
LED DRIVE
4.3
0
Q102
UN2213-TX
LED DRIVE
4.6
0
Q103
UN2213-TX
LED DRIVE
4.6
0
■
⊲⊲⊲
REC
TIMER REC
R107
330
R108
180
R109
270
R110
270
D106
SLR-34DC3
D107
SLR-34YC3
D108
SLR-34VC3
D109
SLR-34VC3
Q104
UN2213-TX
LED DRIVE
4.8
0
Q105
UN2213-TX
LED DRIVE
4.8
0
R111
2200
R112
2200
S101
HI-SPEED
REWIND
S102
PAUSE
05

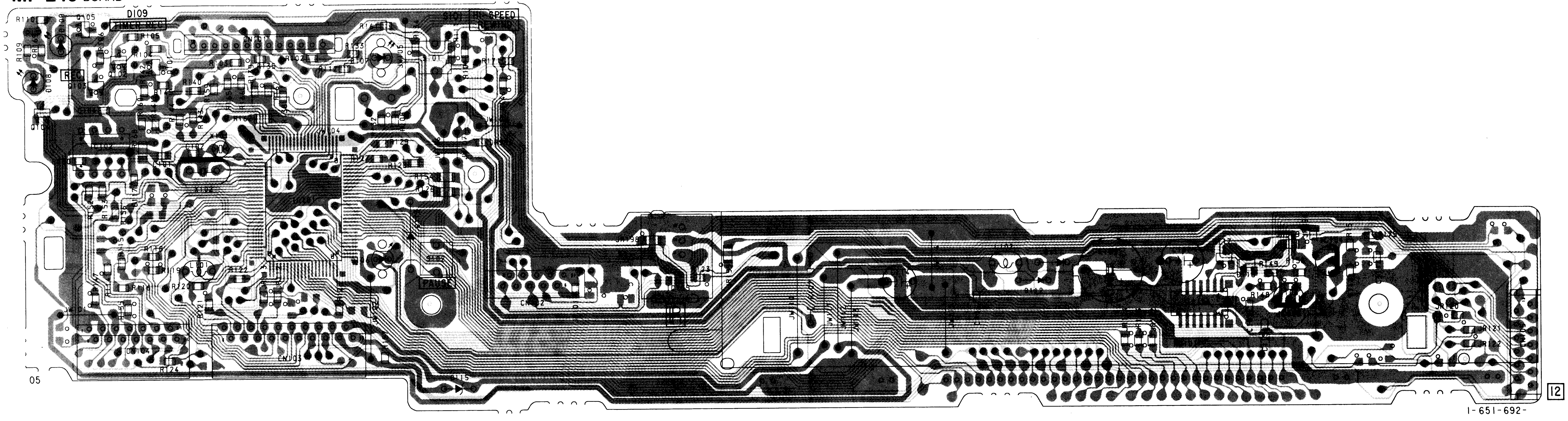
MODE CONTROL

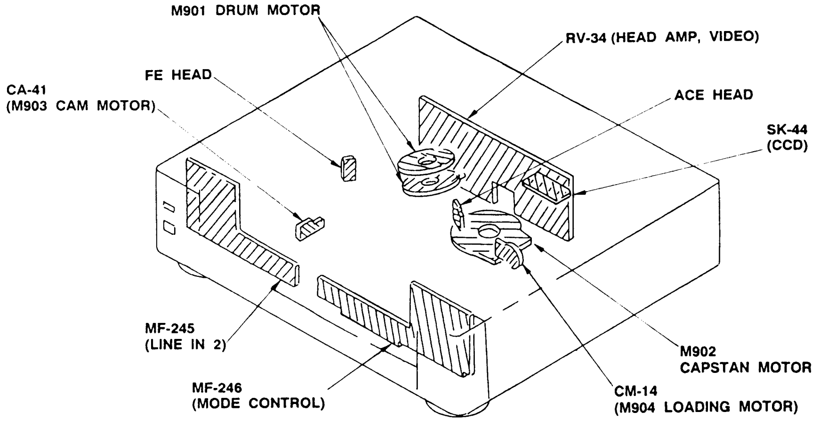

11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
(See page 4-28)
TO PT-97 BOARD CN703
(See page 4-28)
TO PT-97 BOARD CN704
CN103 20P
F (+)
F (-)
-30V
CG CS
SI BUS
SO BUS
S CLK
COSMO RST
COSMO CS
V SYNC
H DET
AN GND
AFT
TUN SYS 1
TUN SYS 0
N.C.
PLL ENABLE
PLL DATA
PLL CLK
N.C.
CN104 14P
FORCED (F MONO)
TA.MUTE
TUN CONT1
TUN CONT0
TUN CONT2
SDA
SCL
STEREO DET
POWER CONT.
D6V
BUZZER
D GND
V DET
D GND
D115
MTZJ-T-77-8.2B
R157
3300
C114
10
50V
IC101
TIMER/TUNER
MODE CONTROL
MB89096PF-G-126-BND
K881/X831/836EE BG:5.1
X821/X731/736EE I, DK:5.1
K881/X831/836EE TV SYSTEM BG, DK:5.1
X821/X731/736EE TV SYSTEM I:5.1
NTSC PB SW:NTSC3.58 0V
NTSC4.43 5.1V
ON PAL TV 5.1V
PAL MESECAM 5.1V
NTSC 0V
K881 ECHO VR Min 0V
IC102
EEP ROM
IC102 S93C46AB1
VCC
CS
TEST /PRE
CLK
ORG /PE
DI
GND
DO
R130
10k
IC104
POWER FAILURE
DET
IC104
PST-572C
IC103
RESET
IC103
PST-572K
VCC
OUT
GND
IC105
REMOTE CONTROL
RECEIVER
IC105
GP1U58X
X102
10MHz
X101
32KHz
C117 0.047 F
C102 22p CH
C101
16P
R147
1k
D112
11ES2-TA2B
D111
1SS119TD
L102
10uH
C107
330
6.3V
C108
0.1
C109
0.22F
D113
RD6.2ES
(EXCEPT X731)
4.7K (836EE)
7.5K (736EE)
15k (X821)
2.2k (X831)
0 (K881)
(EXCEPT K881)
(K881)
(X731)
(EXCEPT X731)
(B5V)
(BGND)
No Mark:E-E MODE
(CHASSIS)

MF-246 (MODE CONTROL) PRINTED WIRING BOARD

– Ref. No.: MF-246 Board; 5,000 series –

MF-246 BOARD


D109
TIMER REC
REC
Q105
Q108
Q103
R109
R110
R105
R104
R140
R133
CN101
S101
SPEED
PAUSE
CN102
CN103
R124
R121
R122
05
12
1-651-692-


M901 DRUM MOTOR
RV-34 (HEAD AMP, VIDEO)
FE HEAD
CA-41
(M903 CAM MOTOR)
ACE HEAD
SK-44
(CCD)
MF-245
(LINE IN 2)
MF-246
(MODE CONTROL)
M902
CAPSTAN MOTOR
CM-14
(M904 LOADING MOTOR)

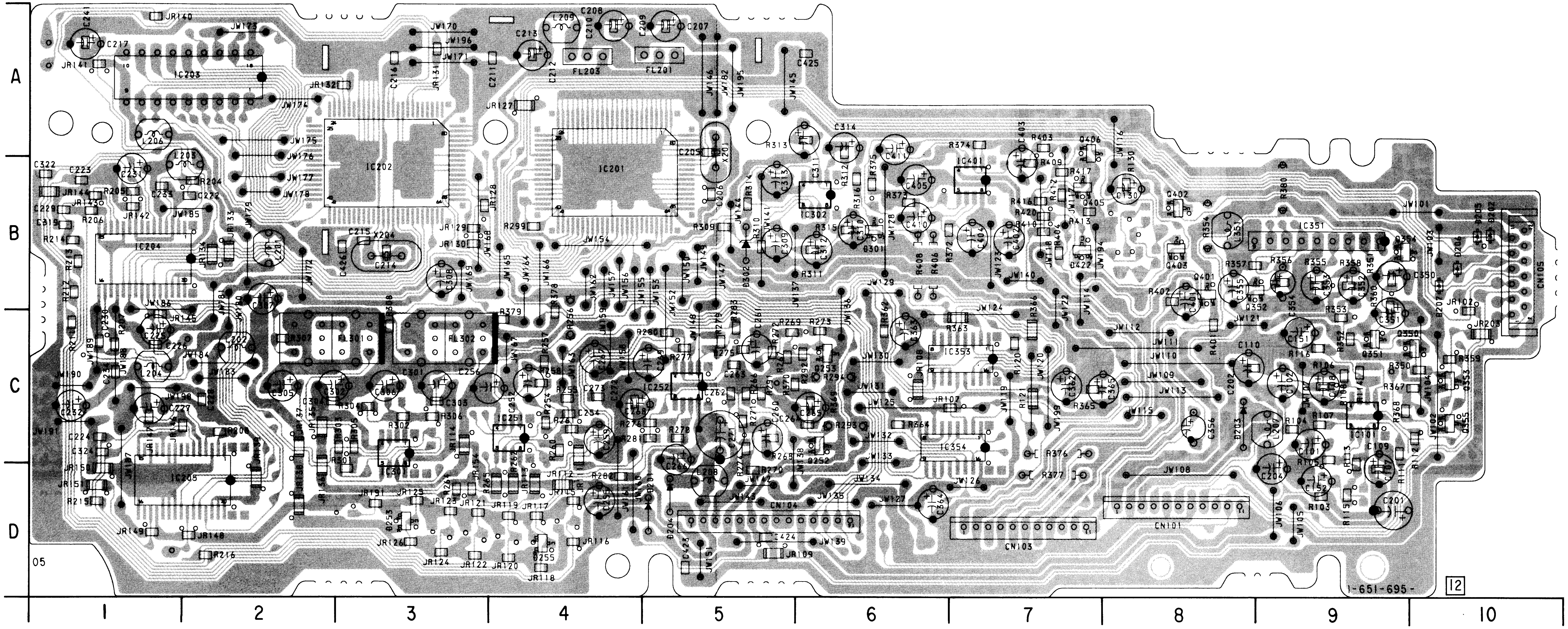
KR-24 (DIGITAL SOUND PROCESSOR), MJ-63 (MICROPHONE JACKS), VR-43 (MICROPHONE VOLUMES) PRINTED WIRING BOARDS

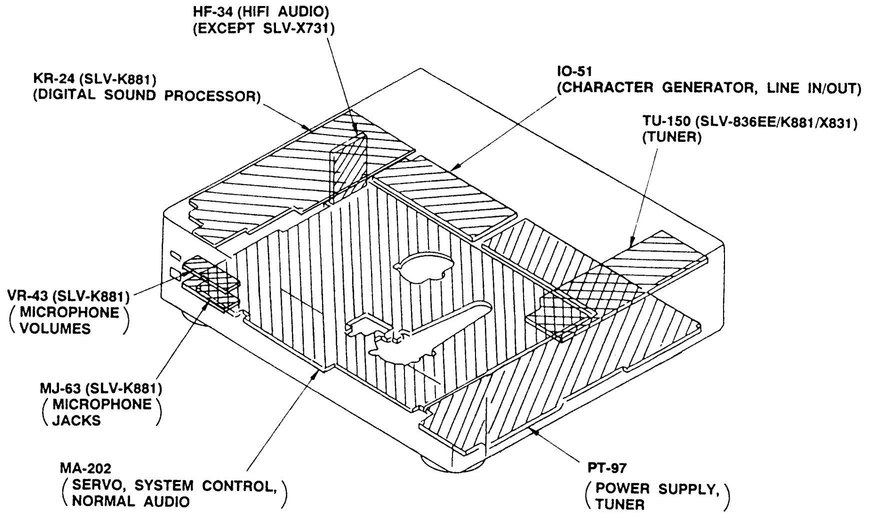
– Ref. No.: KR-24, MJ-63 and VR-43 Boards; 8,000 series –

KR-24 BOARD

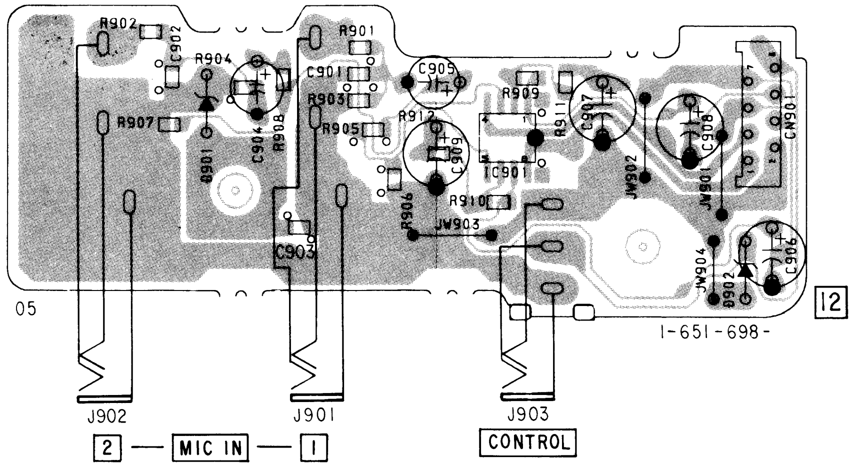
CN101	D-8
CN103	D-7
CN104	D-5
CN105	B-10
D201	D-5
D202	B-10
D203	C-8
D204	D-5
D205	B-10
D206	B-10
D207	B-10
D253	D-3
D255	D-4
D257	D-3
D301	B-6
D302	B-5
D422	B-7
IC101	C-9
IC201	B-4
IC202	B-3
IC203	A-2
IC204	B-1
IC205	D-1
IC251	C-3
IC252	C-4
IC301	C-3
IC302	B-6
IC351	B-9
IC353	C-7
IC354	C-7
IC401	B-7
Q252	C-6
Q253	C-6
Q350	C-10
Q351	C-9
Q352	B-9
Q353	C-10
Q354	B-9
Q355	C-10
Q401	B-8
Q402	B-8
Q403	B-8
Q405	B-7
Q406	A-7

KR-24 BOARD (SLV-K881 ONLY)

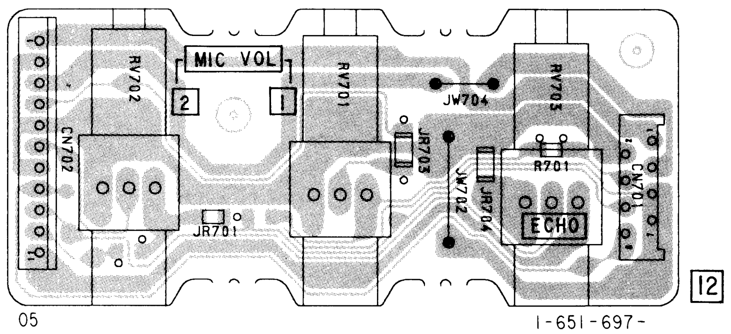

A
B
C
D
1
2
3
4
5
6
7
8
9
10
IC201
IC202
IC203
IC204
IC205
IC251
IC252
IC301
IC302
IC351
IC353
IC354
IC401
IC101
CN101
CN103
CN104
CN105
FL201
FL203
FL301
FL302
X201
X204
05
1-651-695-
12


HF-34 (HIFI AUDIO) (EXCEPT SLV-X731)
KR-24 (SLV-K881) (DIGITAL SOUND PROCESSOR)
IO-51 (CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831) (TUNER)
VR-43 (SLV-K881) (MICROPHONE VOLUMES)
MJ-63 (SLV-K881) (MICROPHONE JACKS)
MA-202 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97 (POWER SUPPLY, TUNER)

MJ-63 BOARD (SLV-K881 ONLY)


R902
C902
R904
R901
C901
R903
C905
R912
R909
R911
C907
C908
CN901
R907
R908
C904
Q901
R905
C909
IC901
R906
R910
JW903
JW902
JW901
C903
JW904
D902
C906
05
1-651-698-
12
J902
J901
J903
2
MIC IN
1
CONTROL

VR-43 BOARD

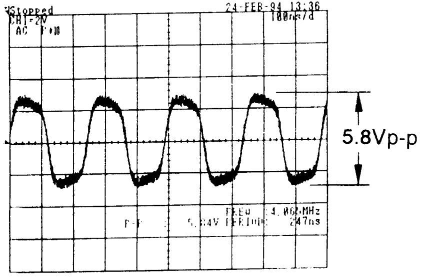

MIC VOL
2
1
RV702
RV701
RV703
JW704
JR703
JW702
JR704
R701
CN702
CN701
JR701
ECHO
05
1-651-697-
12

KR-24 (DIGITAL SOUND PROCESSOR), MJ-63 (MICROPHONE JACKS), VR-43 (MICROPHONE VOLUMES) SCHEMATIC DIAGRAM

– Ref. No.: KR-24, MJ-63 and VR-43 Boards; 8,000 series –

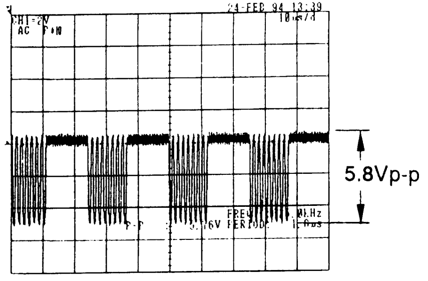
KR-24 BOARD

❶ IC201 (72) REC/PB



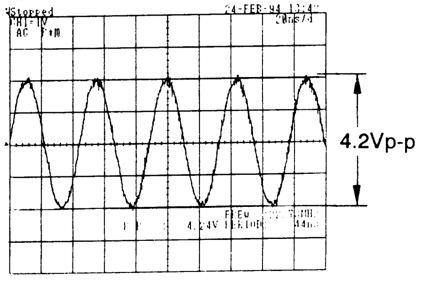
4MHz

❷ IC201 (44) REC/PB



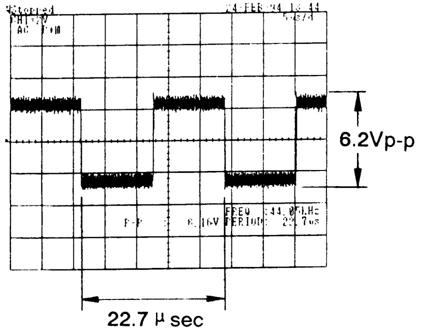
625kHz

❸ IC202 (52) REC/PB

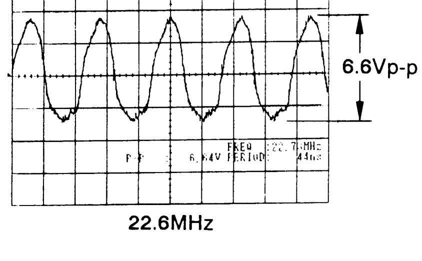


22.6MHz

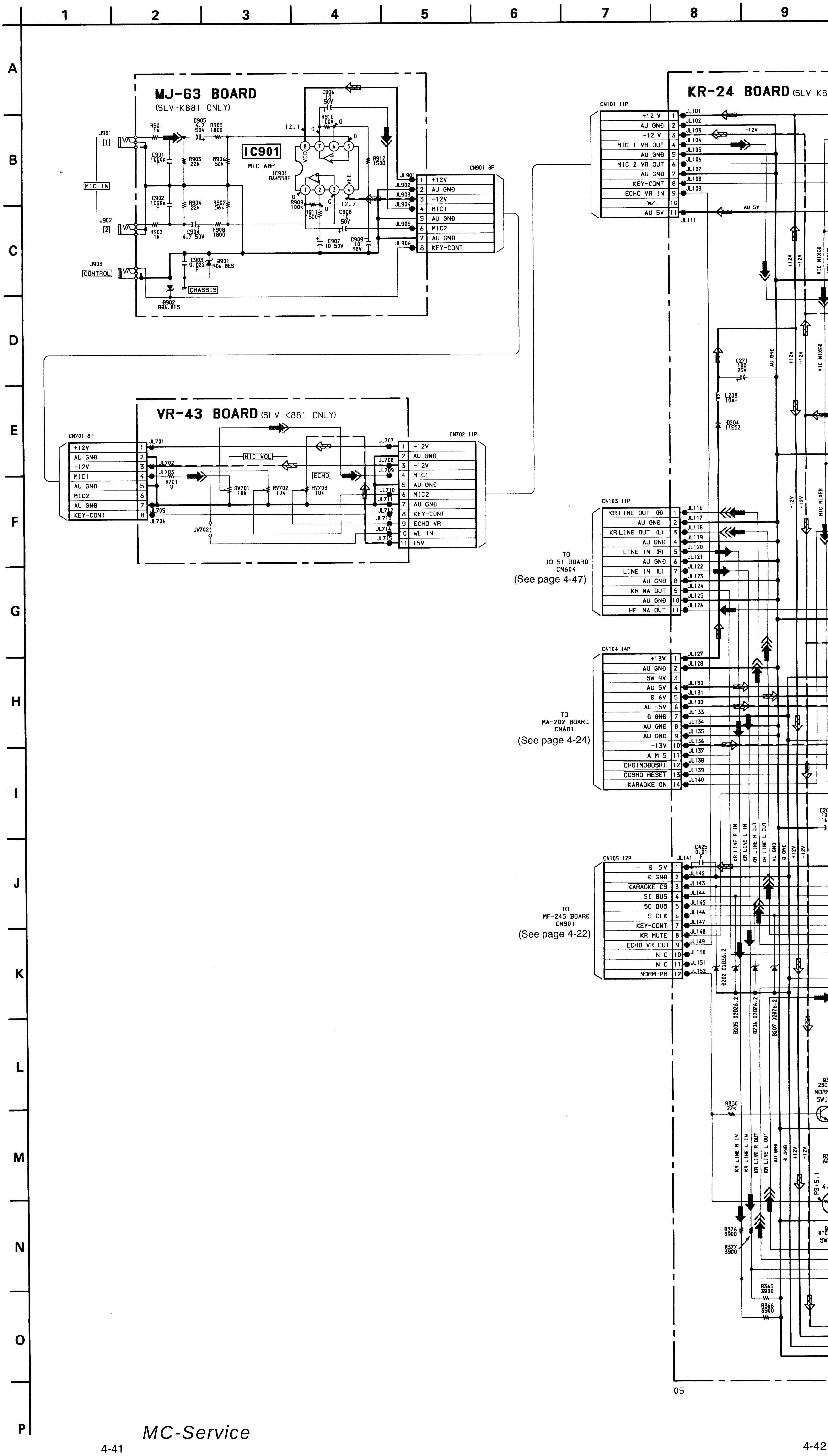
❹ IC204 (21), IC205 (26) REC/PB



❺ IC204 (23), IC205 (23) REC/PB



22.6MHz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A
B
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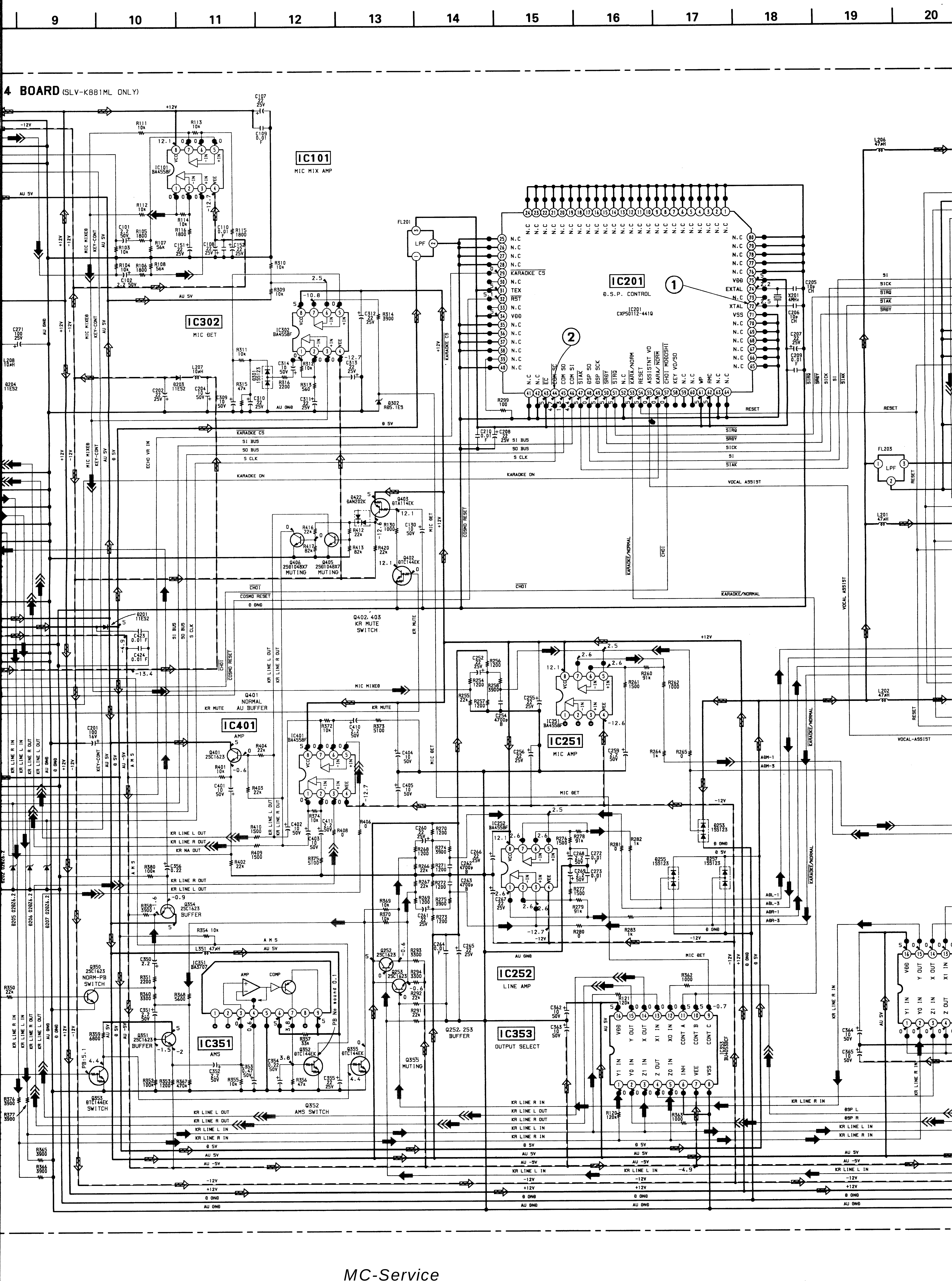
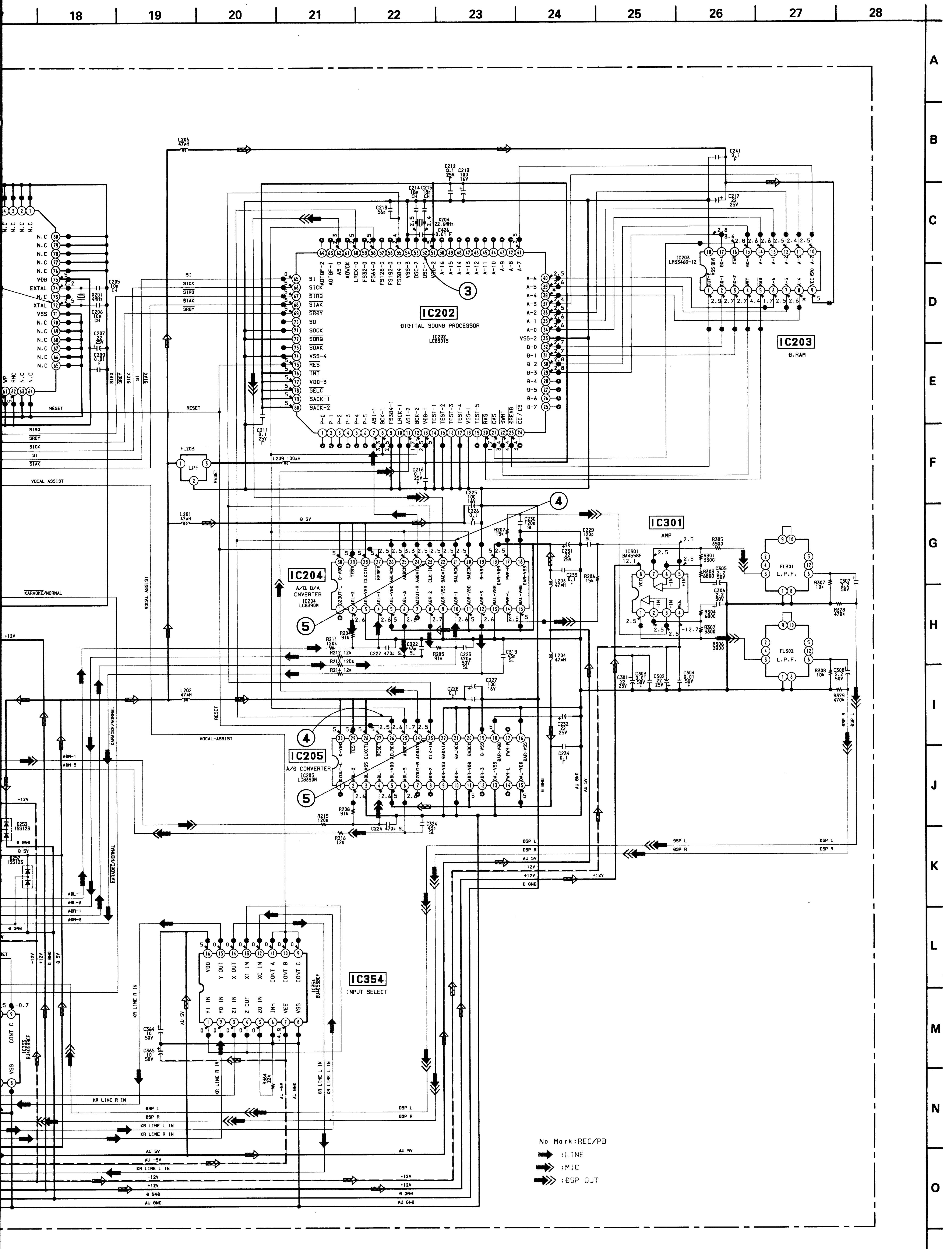
G
H
I
J
K
L
M
N
O
P
MJ-63 BOARD
(SLV-K881 ONLY)
IC901
MIC AMP
IC901 BA4558F
J901
J902
J903
MIC IN
CONTROL
CHASSIS
CN901 8P
+12V
AU GND
-12V
MIC1
AU GND
MIC2
AU GND
KEY-CONT
VR-43 BOARD (SLV-K881 ONLY)
CN701 8P
CN702 11P
MIC VOL
ECHO
RV701 10k
RV702 10k
RV703 10k
ECHO VR
WL IN
+5V
KR-24 BOARD (SLV-K8
CN101 11P
+12 V
AU GND
-12 V
MIC 1 VR OUT
AU GND
MIC 2 VR OUT
AU GND
KEY-CONT
ECHO VR IN
W/L
AU 5V
CN103 11P
KR LINE OUT (R)
AU GND
KR LINE OUT (L)
AU GND
LINE IN (R)
AU GND
LINE IN (L)
AU GND
KR NA OUT
AU GND
HF NA OUT
TO 10-51 BOARD CN604
(See page 4-47)
CN104 14P
+13V
AU GND
SW 9V
AU 5V
D 6V
AU -5V
D GND
AU GND
AU GND
-13V
A M S
CHOIMODOSHI
COSMO RESET
KARAOKE ON
TO MA-202 BOARD CN601
(See page 4-24)
CN105 12P
D 5V
D GND
KARAOKE CS
SI BUS
SO BUS
S CLK
KEY-CONT
KR MUTE
ECHO VR OUT
N C
N C
NORM-PB
TO MF-245 BOARD CN901
(See page 4-22)
C271 100 25V
L208 10μH
D204 11ES2
MIC MIXER
R350 22k
R376 3900
R377 3900
R365 3900
R366 3900
05

MATIC DIAGRAM

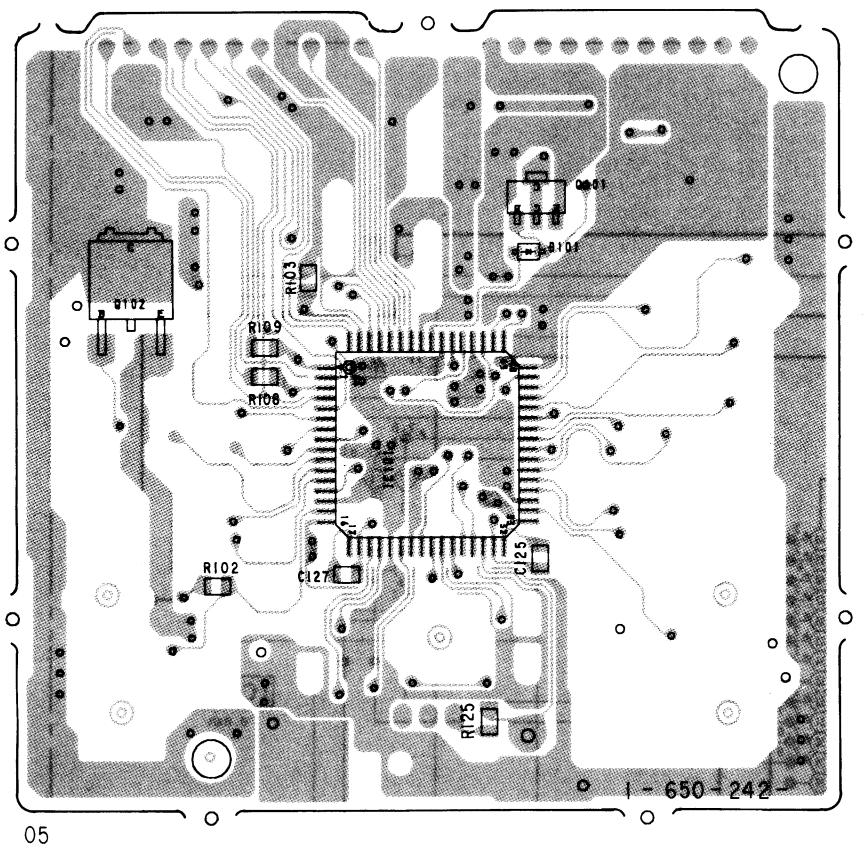

9
10
11
12
13
14
15
16
17
18
19
20
4 BOARD (SLV-K881ML ONLY)
IC101
MIC MIX AMP
IC101 BA4558F
IC302
MIC DET
IC302 BA4558F
IC201
D.S.P. CONTROL
IC201 CXP50112-441Q
X201 4MHz
FL201 LPF
FL203 LPF
Q402, 403
KR MUTE SWITCH
Q403 DTA114EK
Q402 DTC144EK
Q405 2SD1048X7 MUTING
Q406 2SD1048X7 MUTING
Q401
NORMAL
AU BUFFER
IC401
AMP
IC401 BA4558F
IC251
MIC AMP
IC251 BA4558F
IC252
LINE AMP
IC252 BA4558F
Q252, 253
BUFFER
IC351
AMS
IC351 BA3707
Q352
AMS SWITCH
Q354 2SC1623
BUFFER
Q351 2SC1623
BUFFER
Q350 2SC1623
NORM-PB SWITCH
Q353 DTC144EK
SWITCH
Q355
MUTING
IC353
OUTPUT SELECT
IC353 BU4053BCF
KARAOKE CS
SI BUS
SO BUS
S CLK
KARAOKE ON
VOCAL ASSIST
RESET
KARAOKE/NORMAL
CHOI
COSMO RESET
MIC MIXED
MIC DET
KR MUTE
KR LINE L OUT
KR LINE R OUT
KR LINE L IN
KR LINE R IN
AU 5V
AU -5V
D 5V
+12V
-12V
D GND
AU GND
①
②


18
19
20
21
22
23
24
25
26
27
28
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
IC202
DIGITAL SOUND PROCESSOR
IC202
LC83015
IC203
D.RAM
IC203
LM33460-12
IC204
A/D, D/A
CNVERTER
IC204
LC8390M
IC205
A/D CONVERTER
IC205
LC8390M
IC301
AMP
IC301
BA4558F
IC354
INPUT SELECT
IC354
BU4053BCF
IC353
BU4053BCF
FL203
LPF
FL301
L.P.F.
FL302
L.P.F.
X201
4MHz
X204
22.6MHz
RESET
VOCAL ASSIST
KARAOKE/NORMAL
DSP L
DSP R
AU 5V
AU -5V
-12V
+12V
D GND
AU GND
KR LINE L IN
KR LINE R IN
No Mark:REC/PB
:LINE
:MIC
:DSP OUT

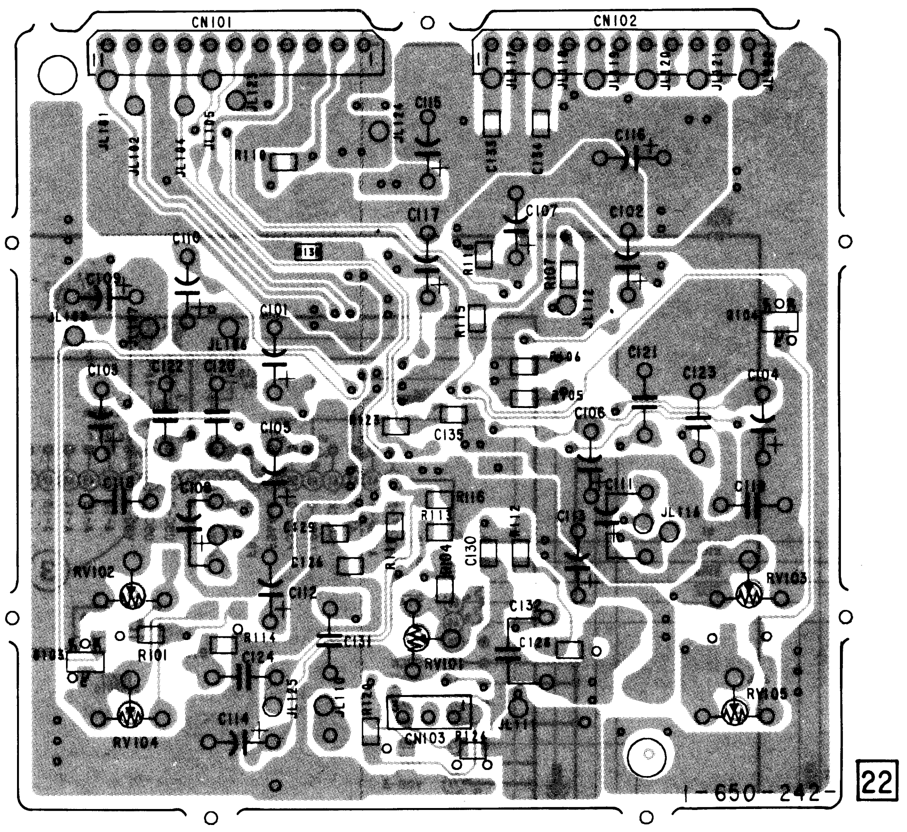
HF-34 (HiFi AUDIO) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

– Ref. No.: HF-34 Board; 6,000 series –

HF-34 BOARD (COMPONENT SIDE)


Q101
R101
Q102
R103
R109
R108
IC101
R102
C127
C125
R125
1-650-242-
22
05

HF-34 BOARD (CONDUCTOR SIDE)

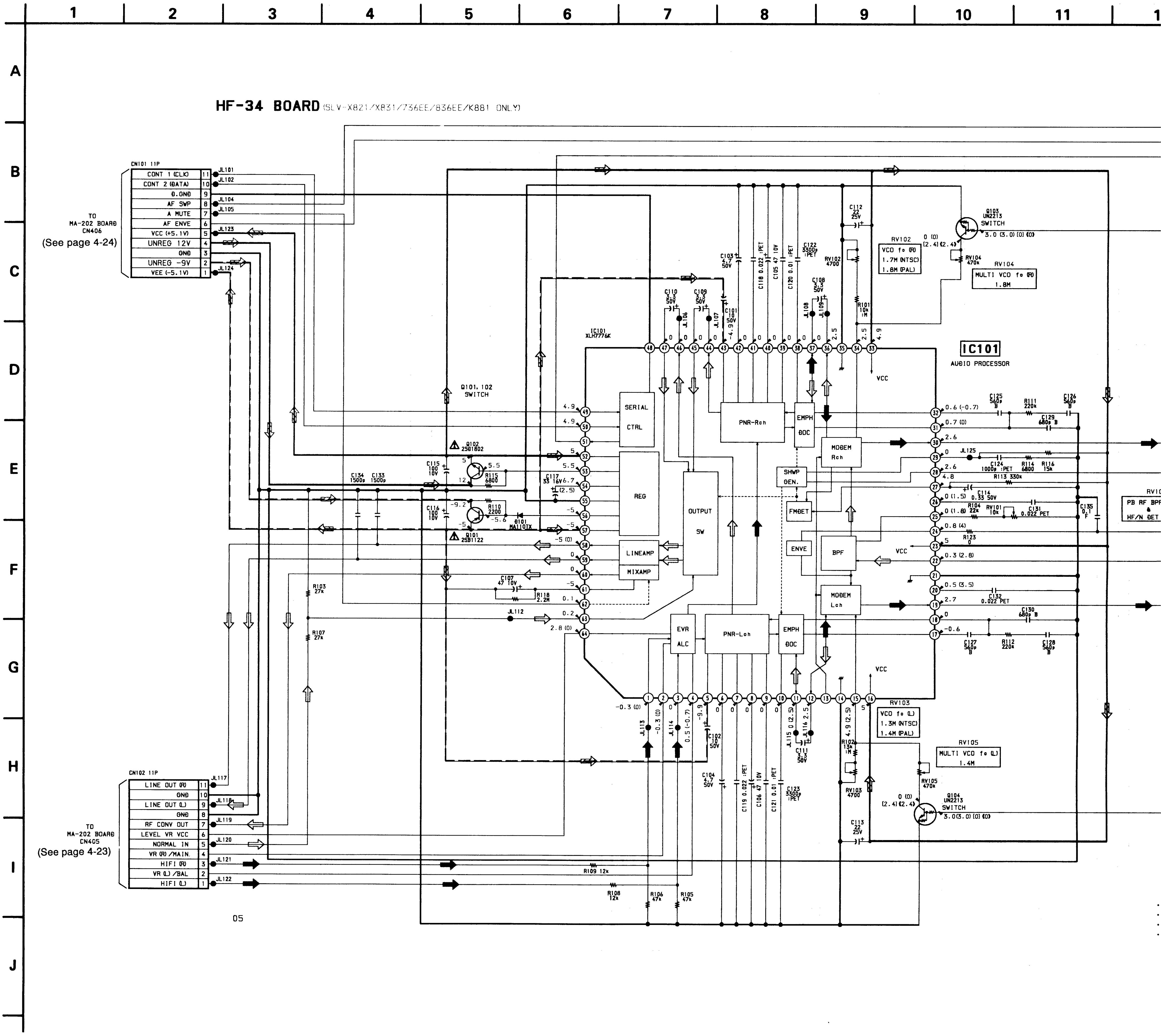

CN101
CN102
C110
C109
C101
C117
C107
C102
C122
C120
C103
C105
C135
C121
C123
C106
C111
C119
C112
C124
C131
C132
C126
C114
CN103
RV101
RV102
RV103
RV104
RV105
Q103
Q104
D101
R101
1-650-242-
22

KR-24 (SLV-K881)
(DIGITAL SOUND

VR-43 (SLV-K881)
(MICROPHONE
VOLUMES)

MJ-63 (SLV-K881
(MICROPHONE
JACKS

MA-202
(SERVO, SY
NORMAL A


1
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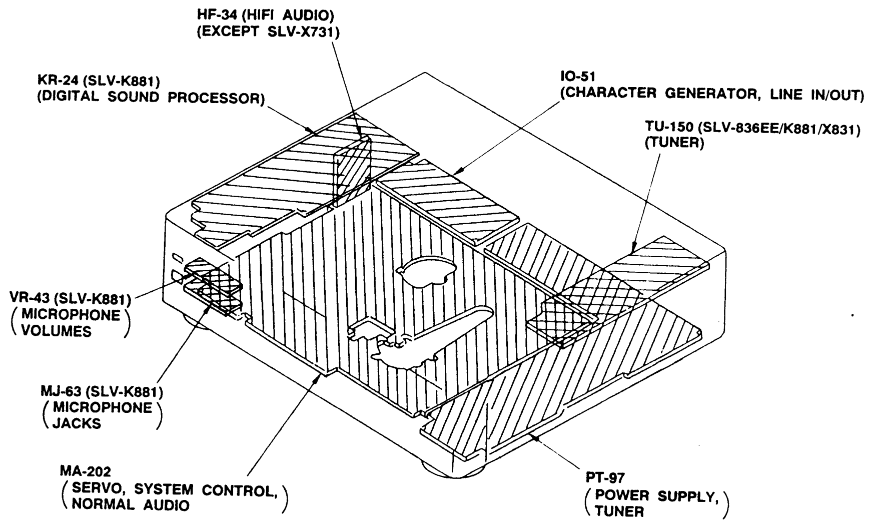
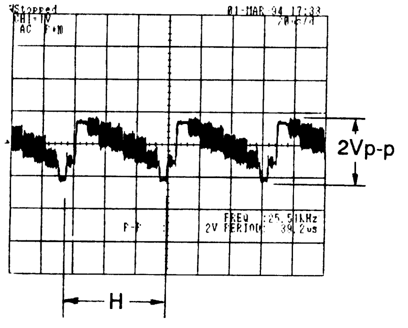
9
10
11
A
B
C
D
E
F
G
H
I
J
HF-34 BOARD (SLV-X821/X831/736EE/836EE/K881 ONLY)
CN101 11P
CONT 1 (CLK)
CONT 2 (DATA)
D.GND
AF SWP
A MUTE
AF ENVE
VCC (+5.1V)
UNREG 12V
GND
UNREG -9V
VEE (-5.1V)
TO MA-202 BOARD CN406
(See page 4-24)
CN102 11P
LINE OUT (R)
GND
LINE OUT (L)
GND
RF CONV OUT
LEVEL VR VCC
NORMAL IN
VR (R) /MAIN.
HIFI (R)
VR (L) /BAL
HIFI (L)
TO MA-202 BOARD CN405
(See page 4-23)
IC101 XLH7776K
IC101
AUDIO PROCESSOR
Q101, 102 SWITCH
Q102 2SD1802
Q101 2SB1122
D101 MA110TX
SERIAL CTRL
REG
LINEAMP
MIXAMP
OUTPUT SW
PNR-Rch
PNR-Lch
EMPH DDC
SHWP GEN.
FMDET
ENVE
BPF
MODEM Rch
MODEM Lch
EVR ALC
Q103 UN2213 SWITCH
Q104 UN2213 SWITCH
RV102
VCO fo (R)
1.7M (NTSC)
1.8M (PAL)
RV104
MULTI VCO fo (R)
1.8M
RV103
VCO fo (L)
1.3M (NTSC)
1.4M (PAL)
RV105
MULTI VCO fo (L)
1.4M
R109 12k
R108 12k
R106 47k
R105 47k
R103 27k
R107 27k
VCC
05

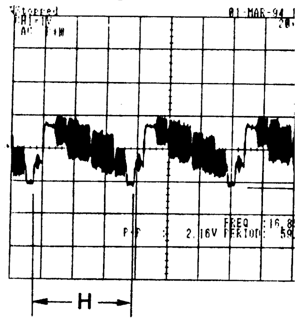

HF-34 (HIFI AUDIO) (EXCEPT SLV-X731)
KR-24 (SLV-K881) (DIGITAL SOUND PROCESSOR)
IO-51 (CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831) (TUNER)
VR-43 (SLV-K881) (MICROPHONE VOLUMES)
MJ-63 (SLV-K881) (MICROPHONE JACKS)
MA-202 (SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97 (POWER SUPPLY, TUNER)

IO-51 BOARD (1/2)

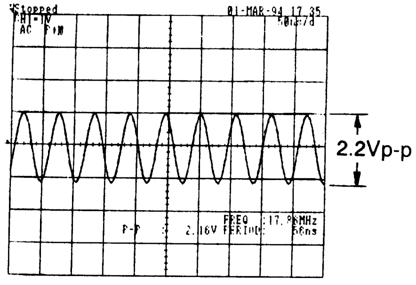
❶ IC601③ PAL REC



❶ IC601③ PAL PB

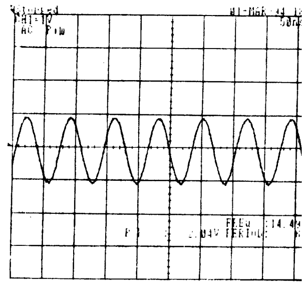


❷ IC601⑧ PAL REC/PB



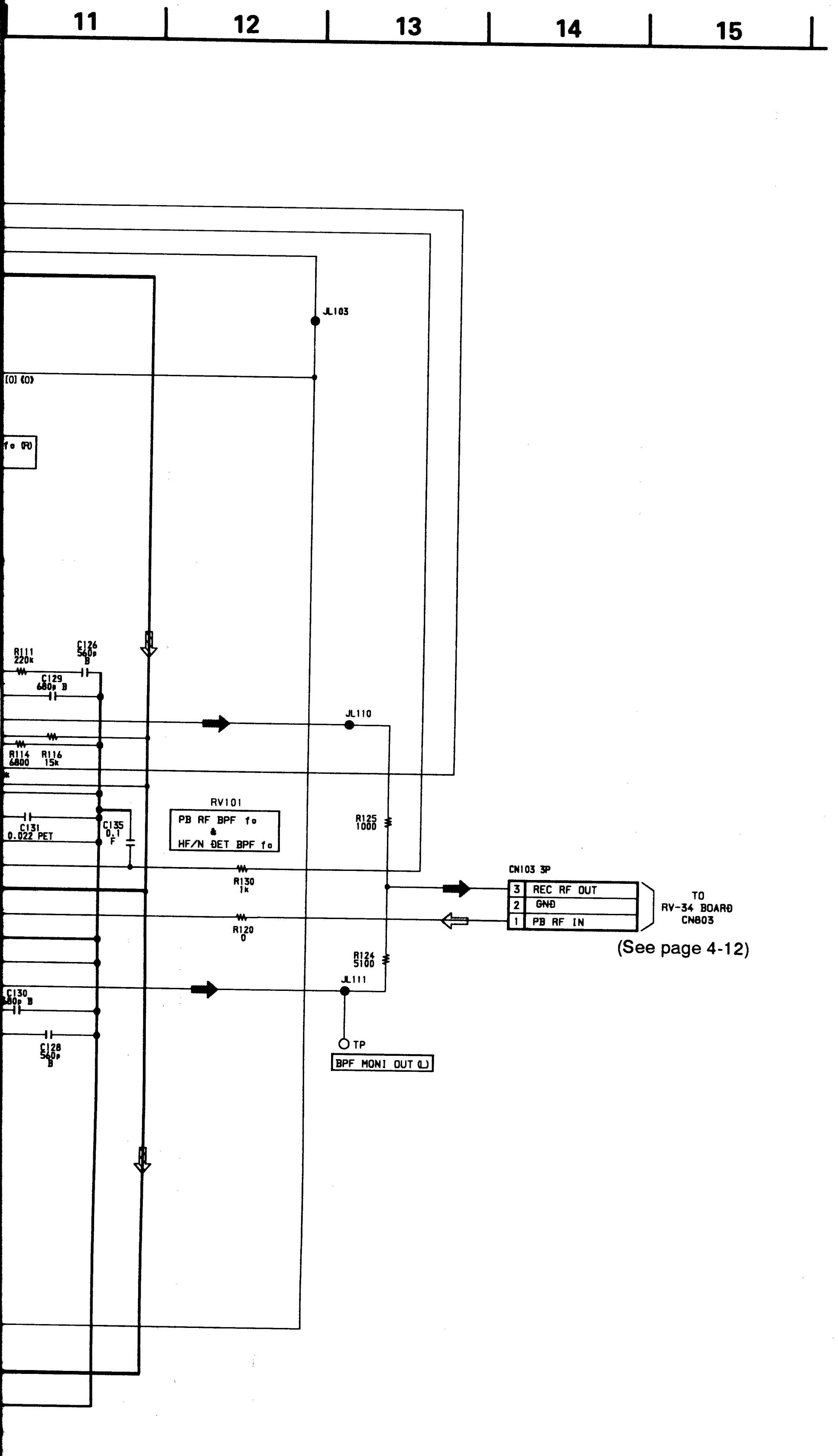
17MHz

❷ IC601⑧ NTSC REC/PB



14MHz

22


11
12
13
14
15
JL103
[O] (O)
fo (R)
R111 220k
C126 560p B
C129 680p B
JL110
R114 6800
R116 15k
RV101
PB RF BPF fo & HF/N DET BPF fo
R125 1000
C131 0.022 PET
C135 0.1 F
R130 1k
R120 0
CN103 3P
3 REC RF OUT
2 GND
1 PB RF IN
TO RV-34 BOARD CN803
(See page 4-12)
R124 5100
JL111
C130 680p B
C128 560p B
TP
BPF MONI OUT (L)

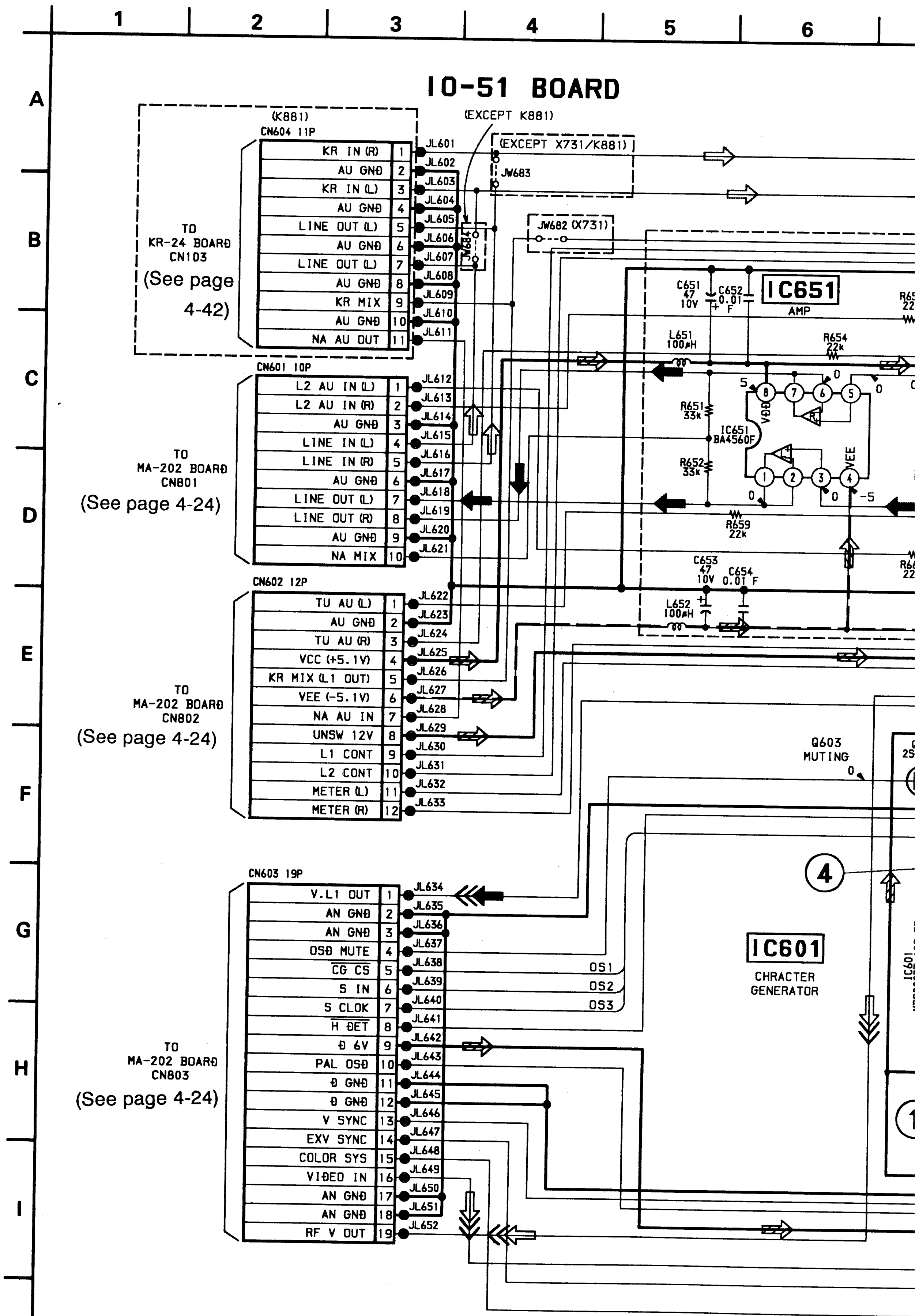
- No Mark : (PAL REC)
- ( ) : (PAL PB)
- [ ] : (NTSC REC)
- « » : (NTSC PB)

- Signal path

	AUDIO SIGNAL
REC	➡
PB	⇨

IO-51 (CHARACTER GENERATOR, LINE IN/OUT) SCHEMATIC DIAGRAM

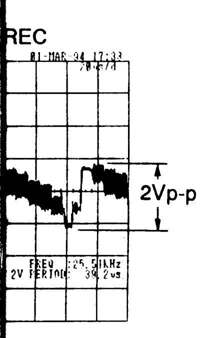
– Ref. No.: IO-51 Board; 4,000 series –

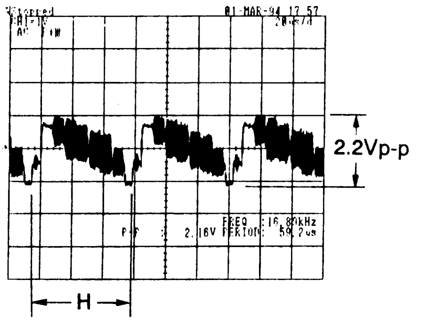

1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
IO-51 BOARD
(K881)
CN604 11P
KR IN (R) 1
AU GND 2
KR IN (L) 3
AU GND 4
LINE OUT (L) 5
AU GND 6
LINE OUT (L) 7
AU GND 8
KR MIX 9
AU GND 10
NA AU OUT 11
TO KR-24 BOARD CN103
(See page 4-42)
JL601
JL602
JL603
JL604
JL605
JL606
JL607
JL608
JL609
JL610
JL611
(EXCEPT K881)
(EXCEPT X731/K881)
JW683
JW682 (X731)
JW684
CN601 10P
L2 AU IN (L) 1
L2 AU IN (R) 2
AU GND 3
LINE IN (L) 4
LINE IN (R) 5
AU GND 6
LINE OUT (L) 7
LINE OUT (R) 8
AU GND 9
NA MIX 10
TO MA-202 BOARD CN801
(See page 4-24)
JL612
JL613
JL614
JL615
JL616
JL617
JL618
JL619
JL620
JL621
CN602 12P
TU AU (L) 1
AU GND 2
TU AU (R) 3
VCC (+5.1V) 4
KR MIX (L1 OUT) 5
VEE (-5.1V) 6
NA AU IN 7
UNSW 12V 8
L1 CONT 9
L2 CONT 10
METER (L) 11
METER (R) 12
TO MA-202 BOARD CN802
(See page 4-24)
JL622
JL623
JL624
JL625
JL626
JL627
JL628
JL629
JL630
JL631
JL632
JL633
CN603 19P
V.L1 OUT 1
AN GND 2
AN GND 3
OSD MUTE 4
CG CS 5
S IN 6
S CLOK 7
H DET 8
D 6V 9
PAL OSD 10
D GND 11
D GND 12
V SYNC 13
EXV SYNC 14
COLOR SYS 15
VIDEO IN 16
AN GND 17
AN GND 18
RF V OUT 19
TO MA-202 BOARD CN803
(See page 4-24)
JL634
JL635
JL636
JL637
JL638
JL639
JL640
JL641
JL642
JL643
JL644
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
OS1
OS2
OS3
C651 47 10V
C652 0.01 F
IC651
AMP
R65
R654 22k
L651 100μH
R651 33k
IC651 BA4560F
VDD
VEE
R652 33k
R659 22k
C653 47 10V
C654 0.01 F
L652 100μH
0
-5
Q603 MUTING
4
IC601
CHRACTER GENERATOR

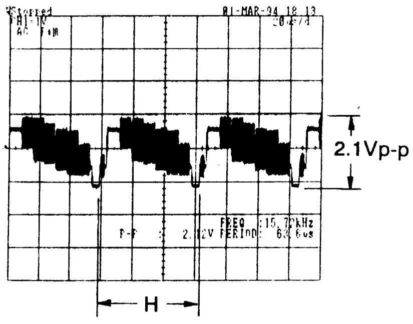
- Signal path

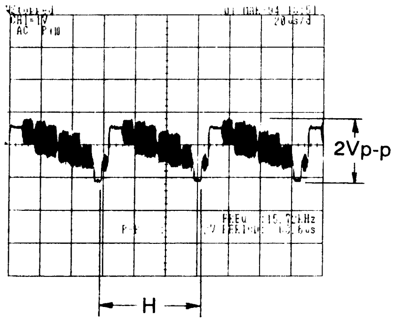
	VIDEO SIGNAL Y/CHROMA	AUDIO SIGNAL
REC	➡》	➡
PB	⇨》	⇨

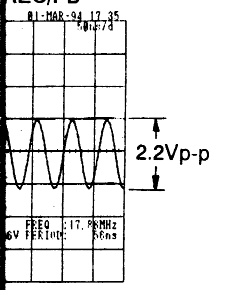
/2)

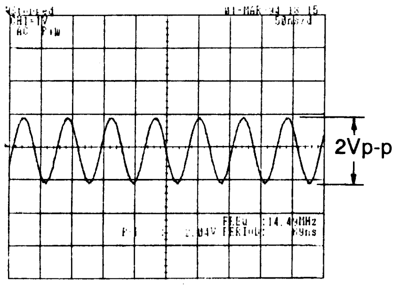

REC


❶ IC601③ PAL PB

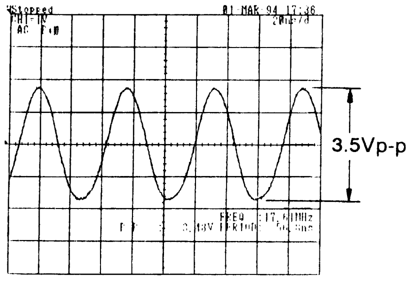

❶ IC601③ NTSC REC


❶ IC601③ NTSC PB

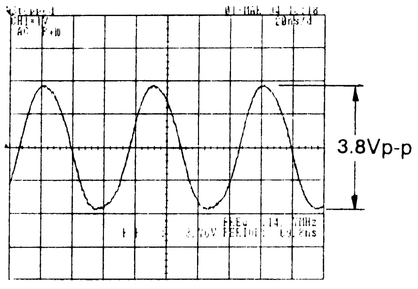

REC/PB


❷ IC601⑧ NTSC REC/PB

14MHz


❸ IC601⑨ PAL REC/PB

17MHz

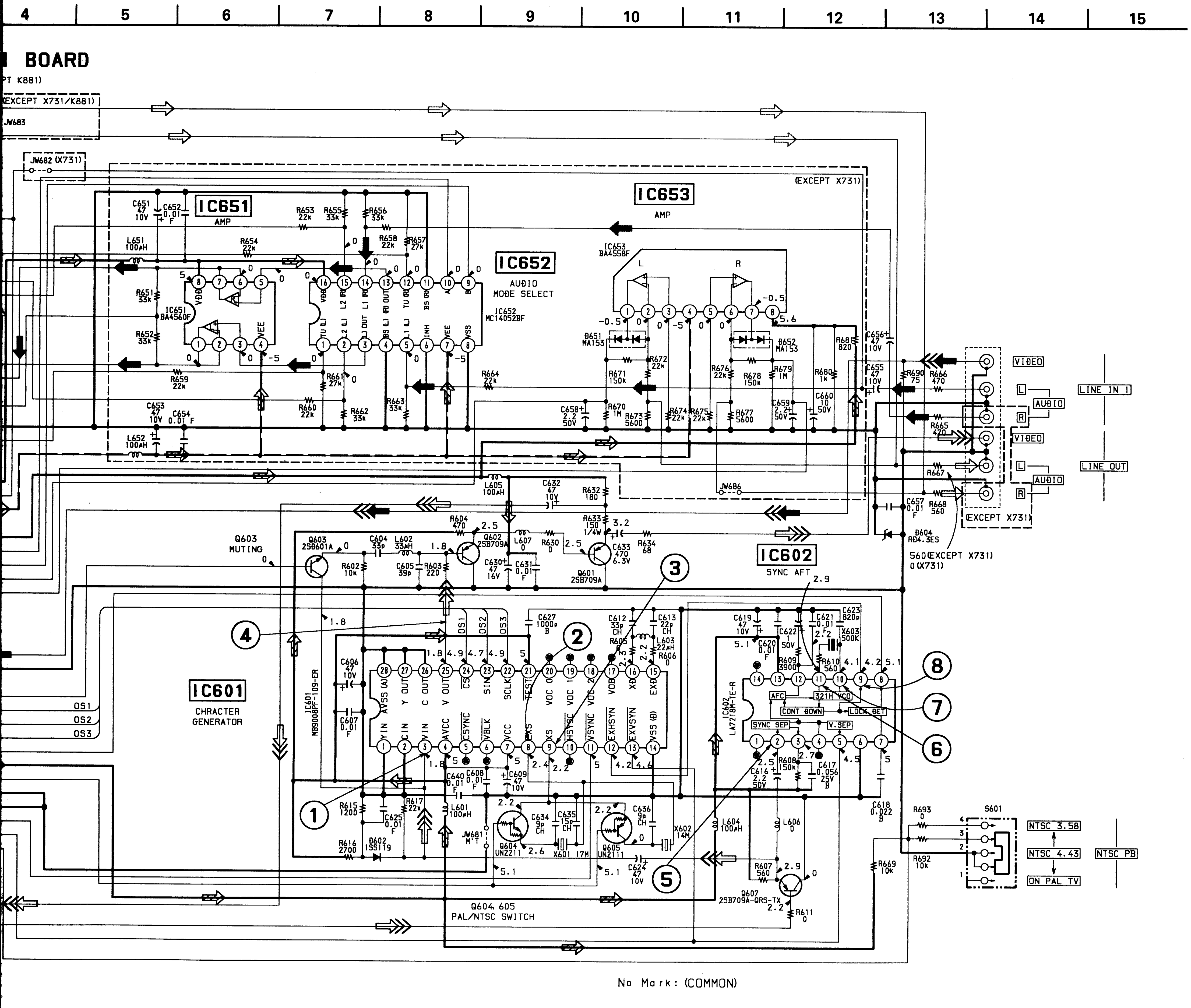

❸ IC601⑨ NTSC REC/PB

14MHz

) SCHEMATIC DIAGRAM

BOARD

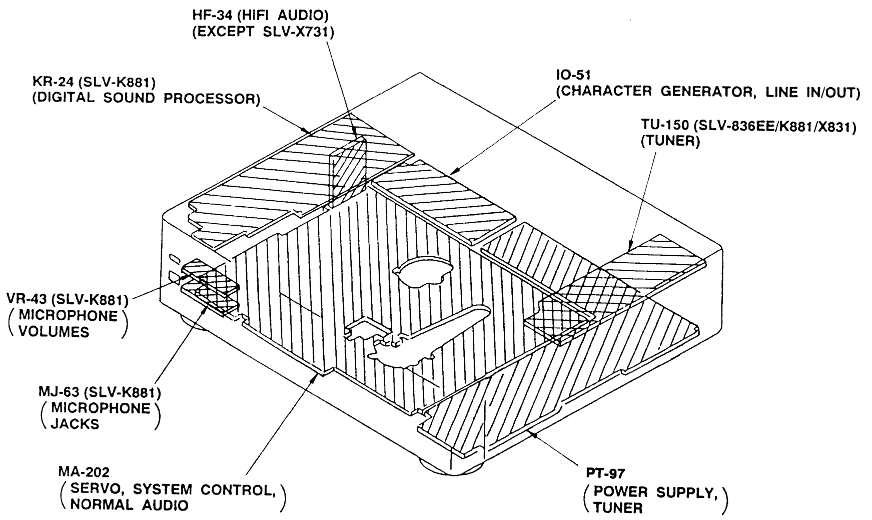
T K881)


4
5
6
7
8
9
10
11
12
13
14
15
EXCEPT X731/K881)
JW683
JW682 (X731)
(EXCEPT X731)
IC651
AMP
IC651 BA4560F
IC652
AUDIO MODE SELECT
IC652 MC14052BF
IC653
AMP
IC653 BA4558F
IC601
CHRACTER GENERATOR
IC601 MB90080PF-109-ER
IC602
SYNC AFT
IC602 LA7218M-TE-R
SYNC SEP
V.SEP
AFC
CONT DOWN
LOCK DET
321H VCO
Q603 MUTING
Q603 2SB601A
Q602 2SB709A
Q601 2SB709A
Q604 UN2211
Q605 UN2111
Q607 2SB709A-QRS-TX
Q604, 605 PAL/NTSC SWITCH
D651 MA153
D652 MA153
D602 1SS119
D604 RD4.3ES
X601 17M
X602 14M
X603 500K
S601
VIDEO
L
R
AUDIO
LINE IN 1
LINE OUT
(EXCEPT X731)
NTSC 3.58
NTSC 4.43
NTSC PB
ON PAL TV
560(EXCEPT X731)
0(X731)
OS1
OS2
OS3
JW681 M'T
JW686
①
②
③
④
⑤
⑥
⑦
⑧

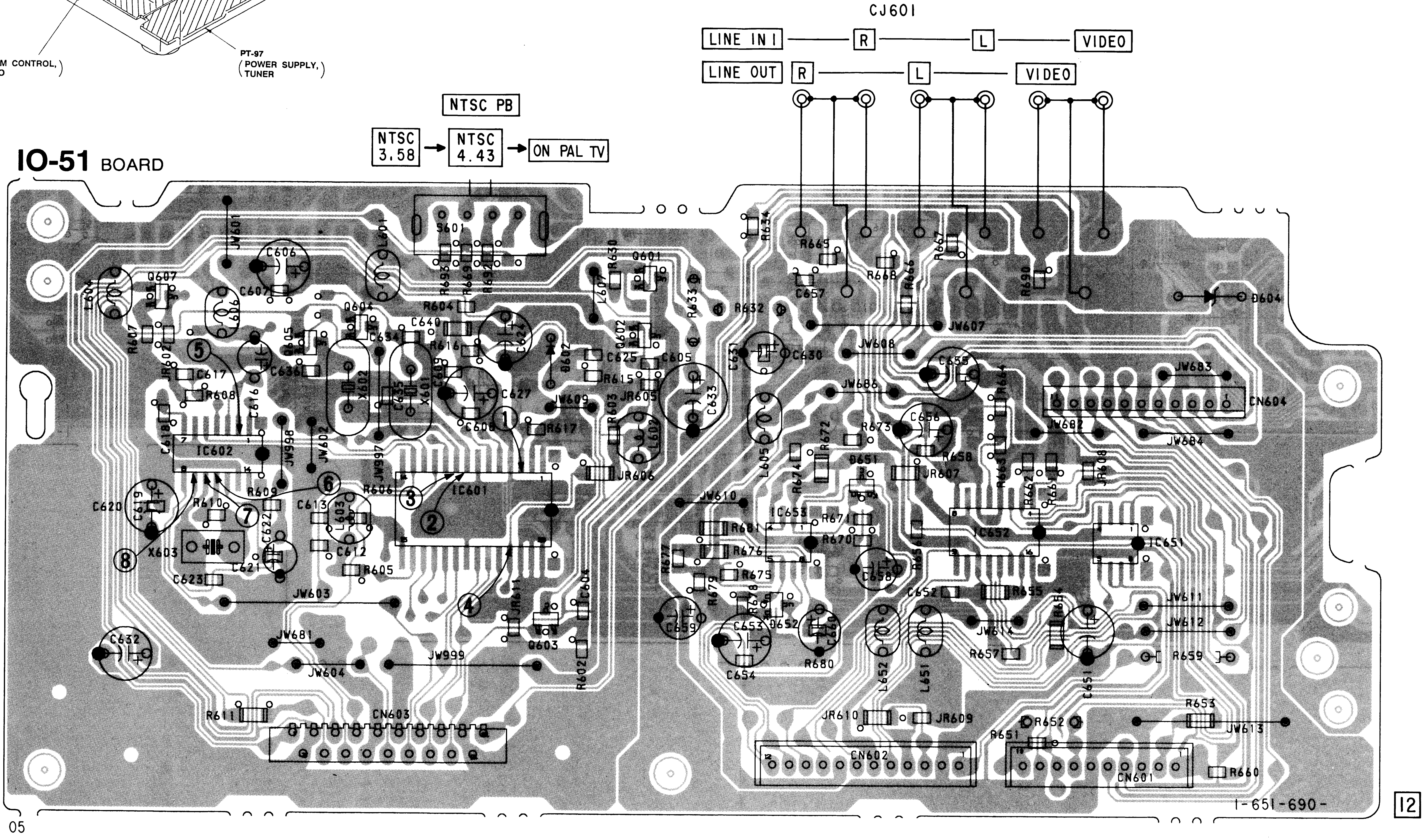
No Mark: (COMMON)

IO-51 (CHARACTER GENERATOR, LINE IN/OUT) PRINTED WIRING BOARD

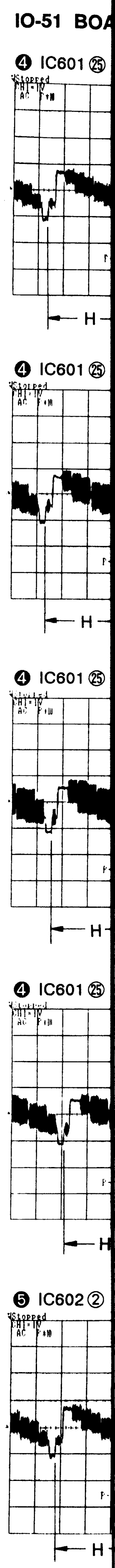
– Ref. No.: IO-51 Board; 4,000 series –

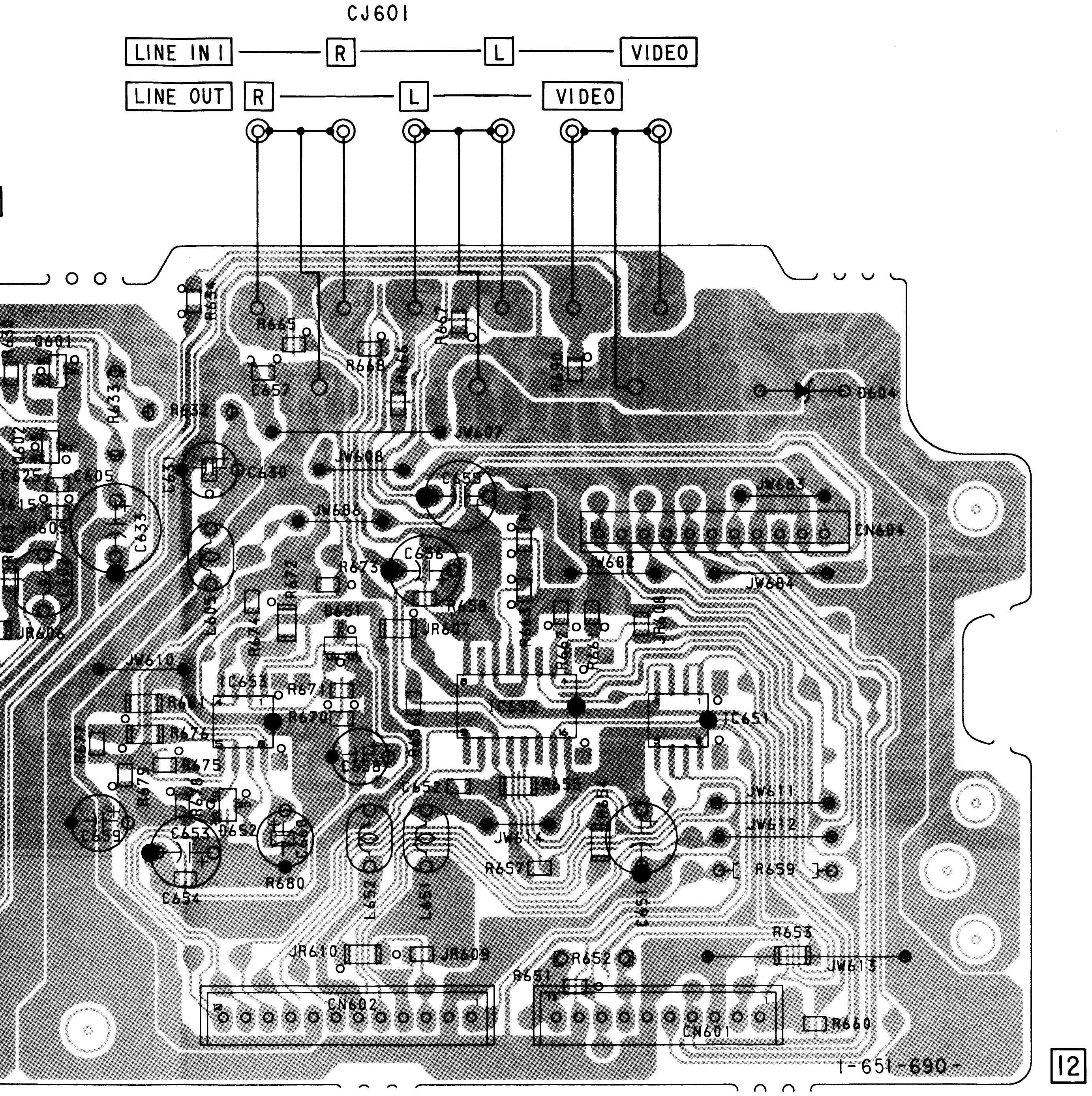

HF-34 (HIFI AUDIO)
(EXCEPT SLV-X731)
KR-24 (SLV-K881)
(DIGITAL SOUND PROCESSOR)
IO-51
(CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831)
(TUNER)
VR-43 (SLV-K881)
(MICROPHONE VOLUMES)
MJ-63 (SLV-K881)
(MICROPHONE JACKS)
MA-202
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97
(POWER SUPPLY, TUNER)

IO-51 BOARD


CJ601
LINE IN I
R
L
VIDEO
LINE OUT
R
L
VIDEO
NTSC PB
NTSC 3.58
NTSC 4.43
ON PAL TV
S601
IC601
IC602
IC651
IC652
IC653
Q601
Q603
Q604
Q607
Q651
Q652
X601
X602
X603
D604
CN601
CN602
CN603
CN604
L601
L604
L605
L607
L609
L651
L652
JW601
JW602
JW603
JW604
JW607
JW608
JW609
JW610
JW611
JW612
JW613
JW681
JW682
JW683
JW684
JW686
JW997
JW998
JW999
JR605
JR606
JR607
JR609
JR610
JR611
①
②
③
④
⑤
⑥
⑦
⑧
1-651-690-
12

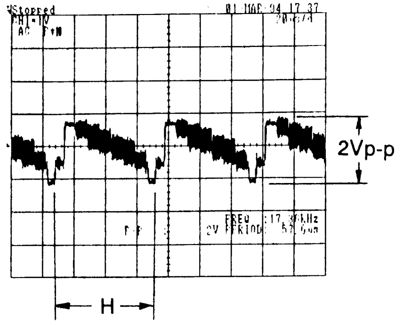
05



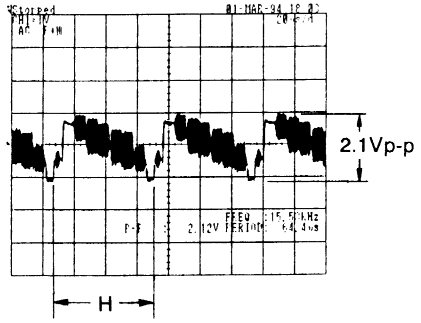

CJ601
LINE IN 1
R
L
VIDEO
LINE OUT
R
L
VIDEO
Q601
R633
R632
C630
C605
C633
C631
C625
R615
JR605
L602
JR606
R665
C657
R668
R666
R667
R690
D604
R634
JW607
JW608
C655
JW686
JW683
CN604
R673
C656
R658
JW682
JW684
D651
JR607
R672
R674
L605
JW610
IC653
R671
R670
R681
R676
R675
R679
C658
IC652
IC651
C652
R655
R654
Q652
C653
C659
C654
R680
L652
L651
JW614
JW611
JW612
R657
R659
R653
JR610
JR609
R652
R651
JW613
CN602
CN601
R660
1-651-690-
12

IO-51 BOARD (2/2)

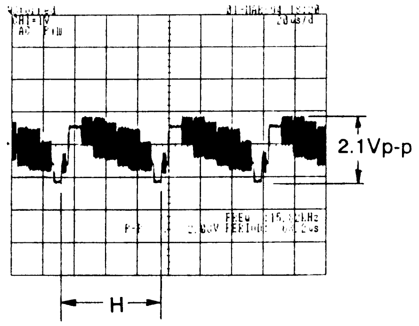
④ IC601 ㉕ PAL REC



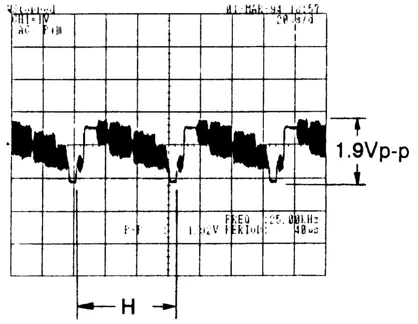
④ IC601 ㉕ PAL PB



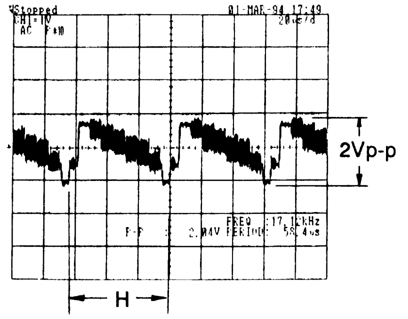
④ IC601 ㉕ NTSC REC



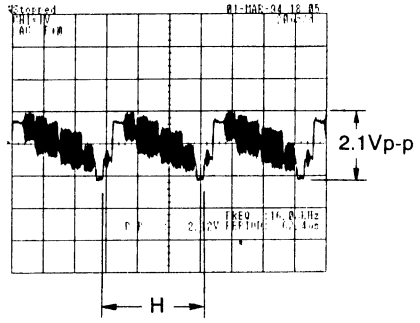
④ IC601 ㉕ NTSC PB



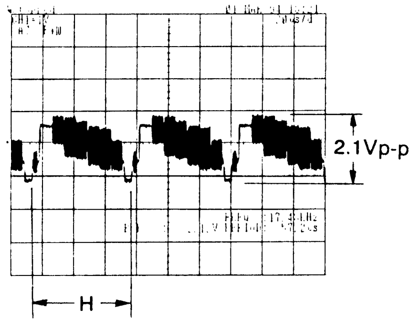
⑤ IC602 ② PAL REC



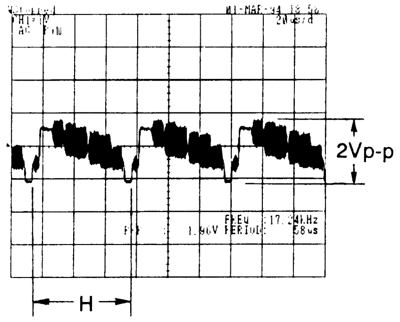
⑤ IC602 ② PAL PB



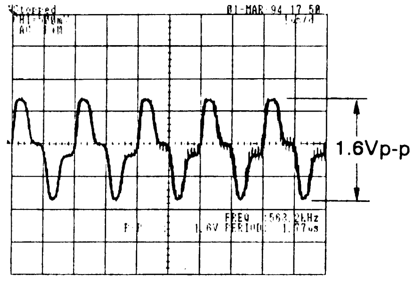
⑤ IC602 ② NTSC REC



⑤ IC602 ② NTSC PB

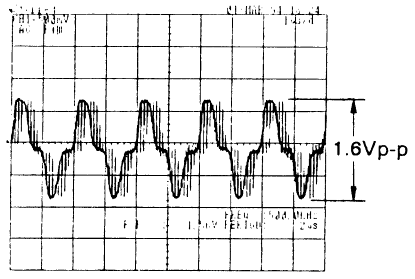


⑥ IC602 ⑪ PAL REC



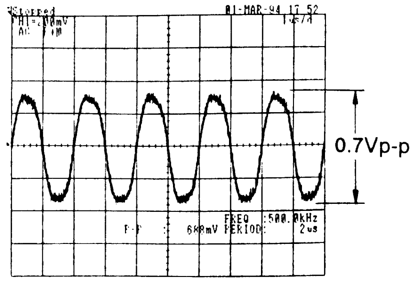
500kHz

⑥ IC602 ⑪ NTSC REC/PB



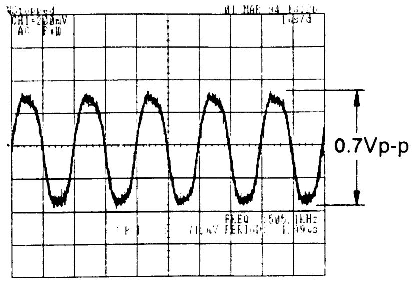
500kHz

⑦ IC602 ⑩ PAL REC/PB



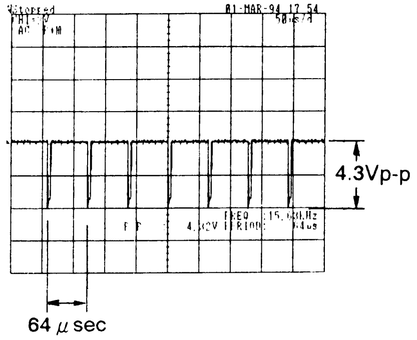
500kHz

⑦ IC602 ⑩ NTSC REC/PB

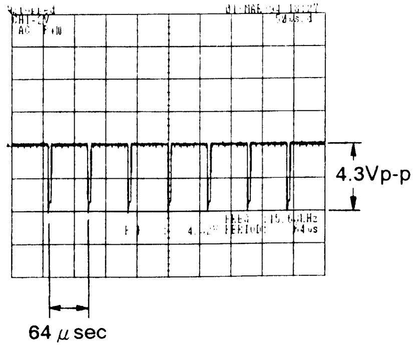


500kHz

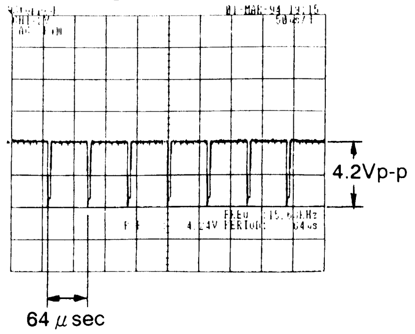
⑧ IC602 ⑨ PAL REC/PB

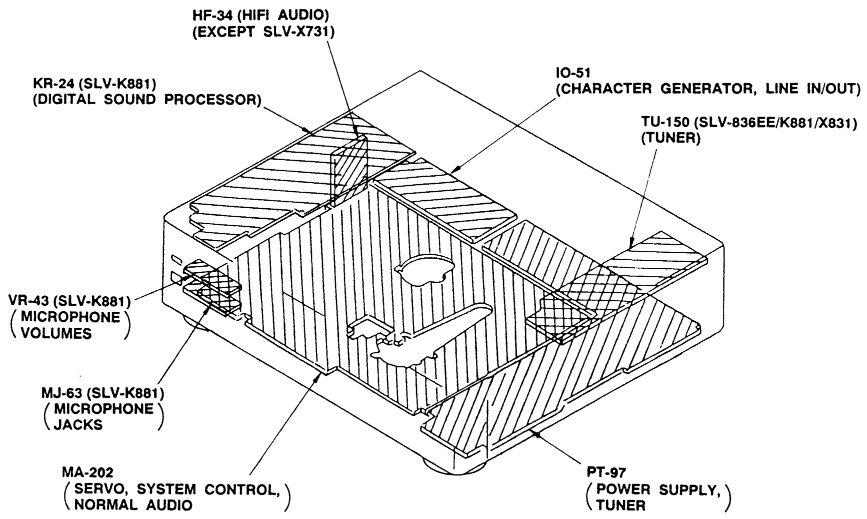


⑧ IC602 ⑨ NTSC REC



⑧ IC602 ⑨ NTSC PB

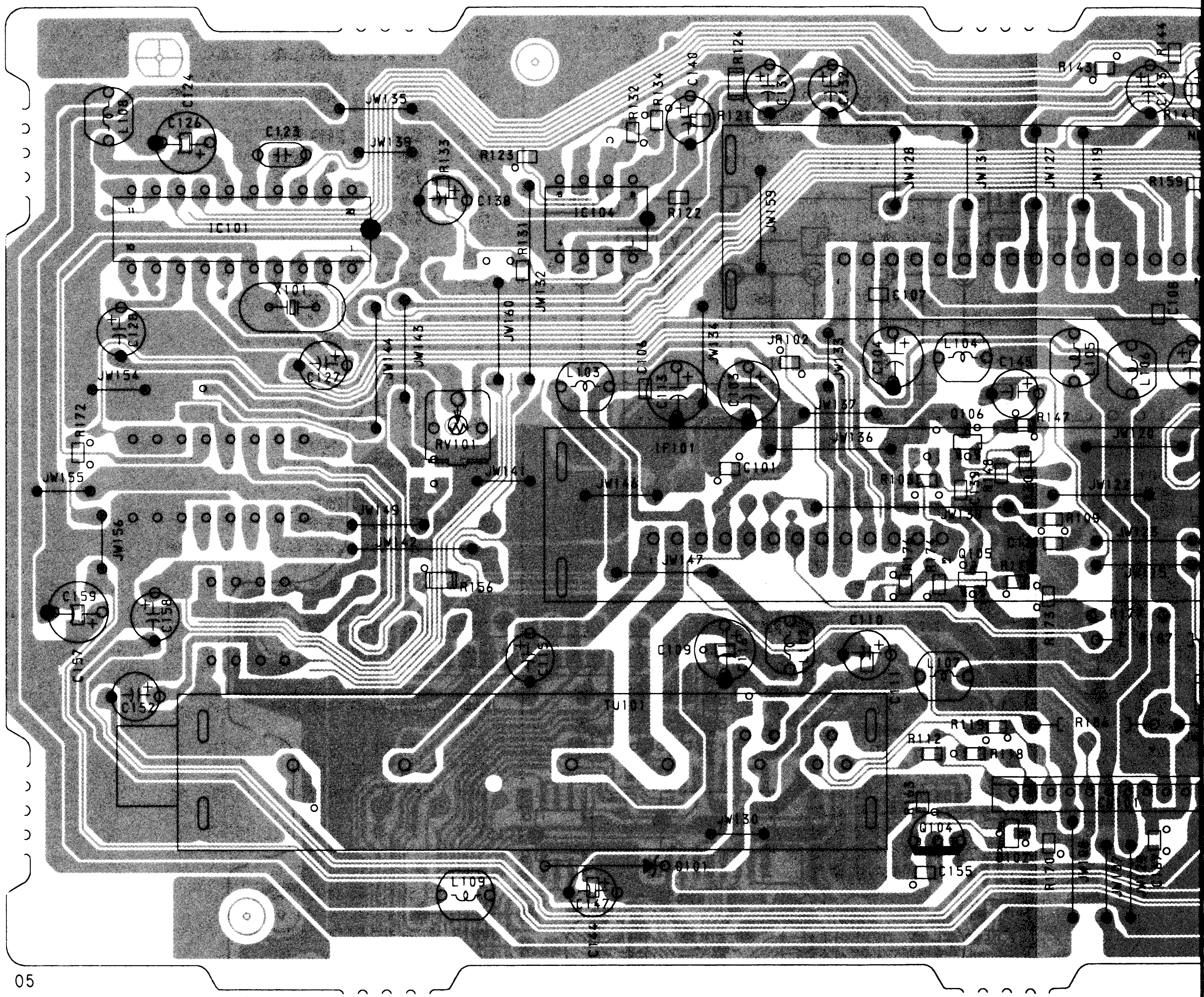



HF-34 (HIFI AUDIO)
(EXCEPT SLV-X731)
KR-24 (SLV-K881)
(DIGITAL SOUND PROCESSOR)
IO-51
(CHARACTER GENERATOR, LINE IN/OUT)
TU-150 (SLV-836EE/K881/X831)
(TUNER)
VR-43 (SLV-K881)
(MICROPHONE VOLUMES)
MJ-63 (SLV-K881)
(MICROPHONE JACKS)
MA-202
(SERVO, SYSTEM CONTROL, NORMAL AUDIO)
PT-97
(POWER SUPPLY, TUNER)

TU-150 (TUNER) PRINTED WIRING BOARD

– Ref. No.: TU-150 Board; 7,000 series –

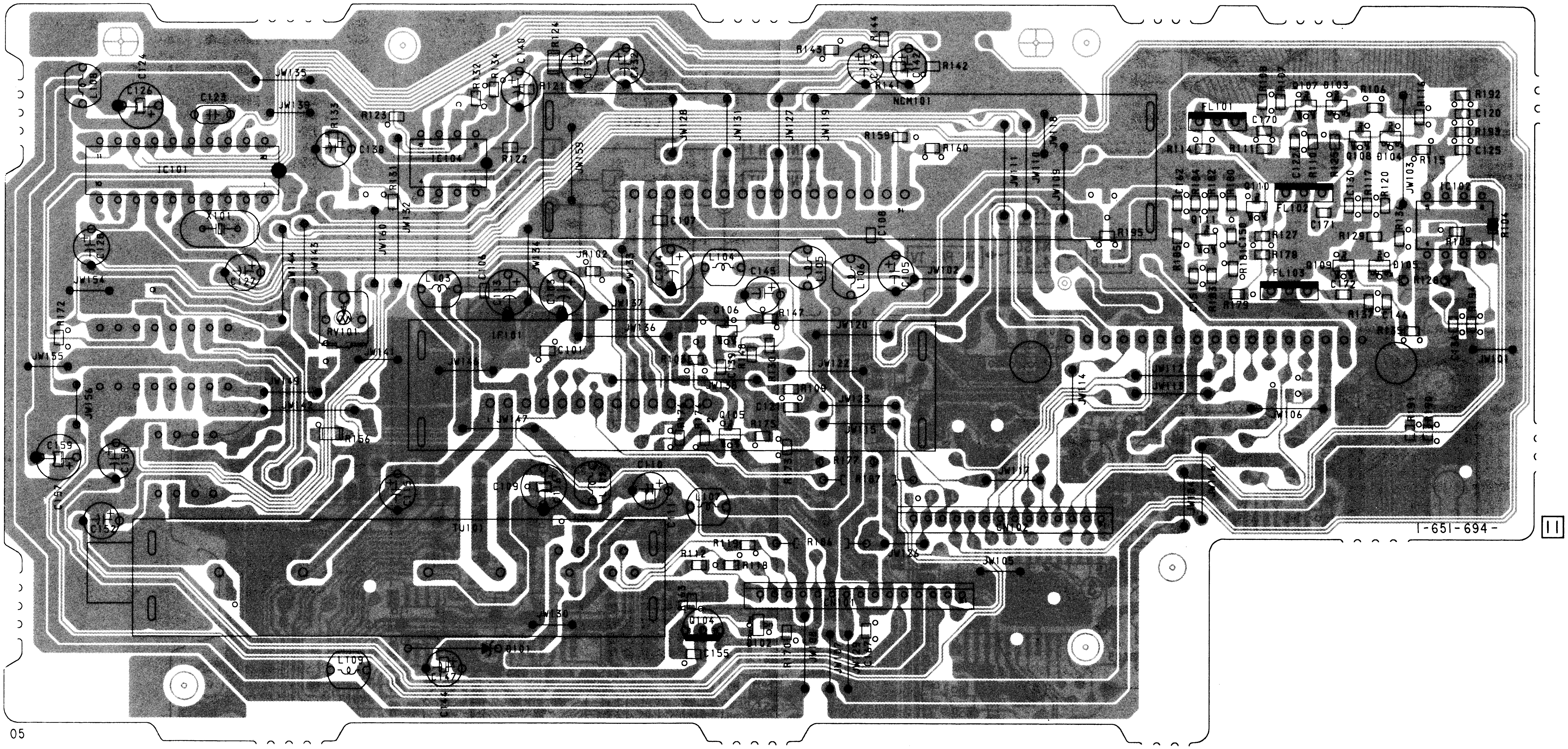
TU-150 BOARD


IC101
IC104
X101
RV101
IF101
TU101
L108
L103
L104
L107
L109
C126
C123
C128
C127
C138
C140
C159
C152
C155
C157
C158
C109
C110
C145
C147
C107
C101
Q104
Q105
Q106
D101
R123
R122
R121
R124
R131
R132
R133
R134
R143
R147
R156
R172
R112
R118
R159
JW135
JW139
JW153
JW154
JW155
JW156
JW144
JW143
JW160
JW141
JW142
JW149
JW147
JW130
JW134
JW136
JW137
JW128
JW131
JW127
JW119
JR102
05

TU-150 (TUNER) PRINTED WIRING BOARD

– Ref. No.: TU-150 Board; 7,000 series –

TU-150 BOARD


IC101
X101
IC104
IC102
IC103
IF101
TU101
FL101
FL102
FL103
NCM101
RV101
L101
L103
L104
L105
L106
L108
L109
C124
C123
C125
C126
C127
C128
C129
C130
C140
C145
C155
C156
C157
C159
C170
C171
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q109
Q110
D101
R104
R111
R114
R115
R120
R122
R123
R124
R127
R129
R141
R142
R143
R144
R147
R156
R159
R160
R175
R178
R192
R195
JW101
JW102
JW105
JW106
JW111
JW112
JW113
JW114
JW117
JW119
JW120
JW122
JW123
JW125
JW127
JW128
JW130
JW131
JW132
JW135
JW136
JW137
JW139
JW141
JW143
JW144
JW147
JW154
JW155
JW156
JW159
JW160
1-651-694-
11
05

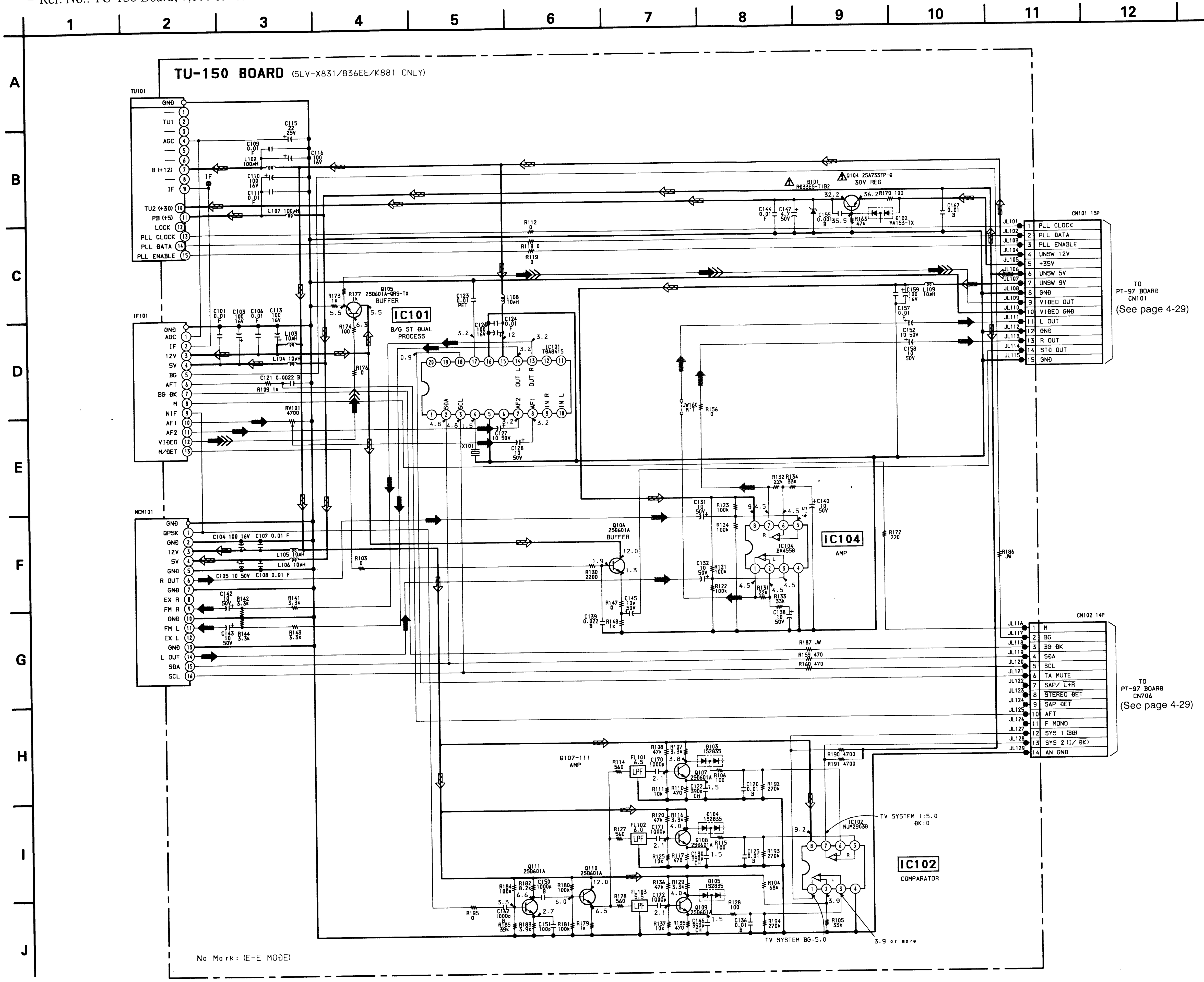
RATOR, LINE IN/OUT)

SLV-836EE/K881/X831)

Y.)

TU-150 (TUNER) SCHEMATIC DIAGRAM

– Ref. No.: TU-150 Board; 7,000 series –

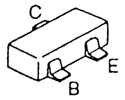

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
TU-150 BOARD (SLV-X831/836EE/K881 ONLY)
TU101
GND
TU1
AGC
B (+12)
IF
TU2 (+30)
PB (+5)
LOCK
PLL CLOCK
PLL DATA
PLL ENABLE
IF101
GND
AGC
IF
12V
5V
BG
AFT
BG DK
M
NIF
AF1
AF2
VIDEO
M/DET
NCM101
GND
QPSK
GND
12V
5V
GND
R OUT
GND
EX R
FM R
GND
FM L
EX L
GND
L OUT
SDA
SCL
IC101
B/G ST DUAL PROCESS
IC101 TBA8415
Q105 2SD601A-QRS-TX BUFFER
Q104 2SA733TP-Q 30V REG
D101 RD33ES-T1B2
D102 MA153-TX
Q106 2SD601A BUFFER
IC104
AMP
IC104 BA4558
Q107-111 AMP
IC102
COMPARATOR
IC102 NJM2903D
TV SYSTEM I:5.0 DK:0
TV SYSTEM BG:5.0
3.9 or more
LPF
CN101 15P
PLL CLOCK
PLL DATA
PLL ENABLE
UNSW 12V
+35V
UNSW 5V
UNSW 9V
GND
VIDEO OUT
VIDEO GND
L OUT
GND
R OUT
STD OUT
GND
TO PT-97 BOARD CN101
(See page 4-29)
CN102 14P
M
BG
BG DK
SDA
SCL
TA MUTE
SAP/ L+R
STEREO DET
SAP DET
AFT
F MONO
SYS 1 (BG)
SYS 2 (I/ DK)
AN GND
TO PT-97 BOARD CN706
(See page 4-29)
No Mark: (E-E MODE)
05

- Signal path

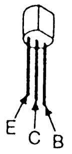
	VIDEO SIGNAL Y/CHROMA	AUDIO SIGNAL
REC	➡≫	➡
PB	⇨≫	⇨

4-3. SEMICONDUCTORS

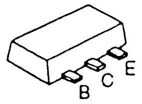
DTC114TK-T146
DTC144EK
DTA114EK
DTA144WK
MSD601-RT1
UN211L
UN2111
UN2113
UN221L
UN2211
UN2213
2SA1162-G
2SA1162Y-TE85L
2SC1623-L5L6
2SD1048-X7
2SC2712-YG
2SD1048-X7
2SD601A-Q



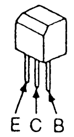
2SA733-K



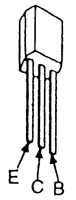
2SB1122-S
2SD1834



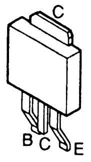
2SB733-34
2SD773-34



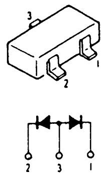
2SC4040-TL2-Q



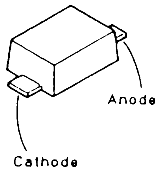
2SD1802FA-S



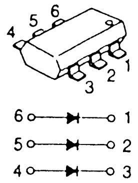
DAP202K
MA152WA
1S2836



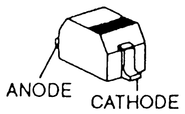
DTZ30C-TT11
02DZ6.2-TPH3


Anode
Cathode

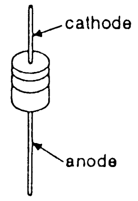
IMN10


4
5
6
3
2
1
6
1
5
2
4
3

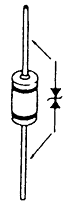
MA110


ANODE
CATHODE

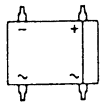
RD33ES-B2
RD4.3ES-B1
RD4.7ES-B2
RD5.1ES-B2
RD6.2ES-B2
RD6.8ES-B1
RD6.8ES-B2
1SS119
1SS133
11ES2


cathode
anode

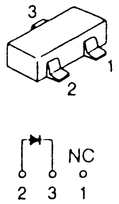
RD9.1E-W



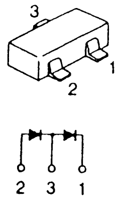
S1WB60



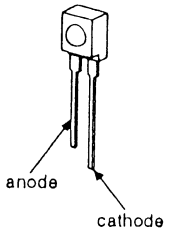
DAN202K
1SS184



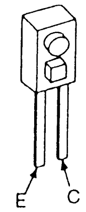
1SS226



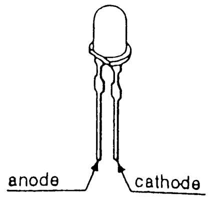
GL451VS1


anode
cathode

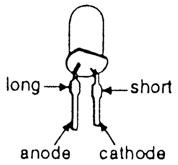
PT483F1S



SLR34DC3
SLR34MC3
SLR34VC3


anode
cathode

TLY123


long
short
anode
cathode

SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

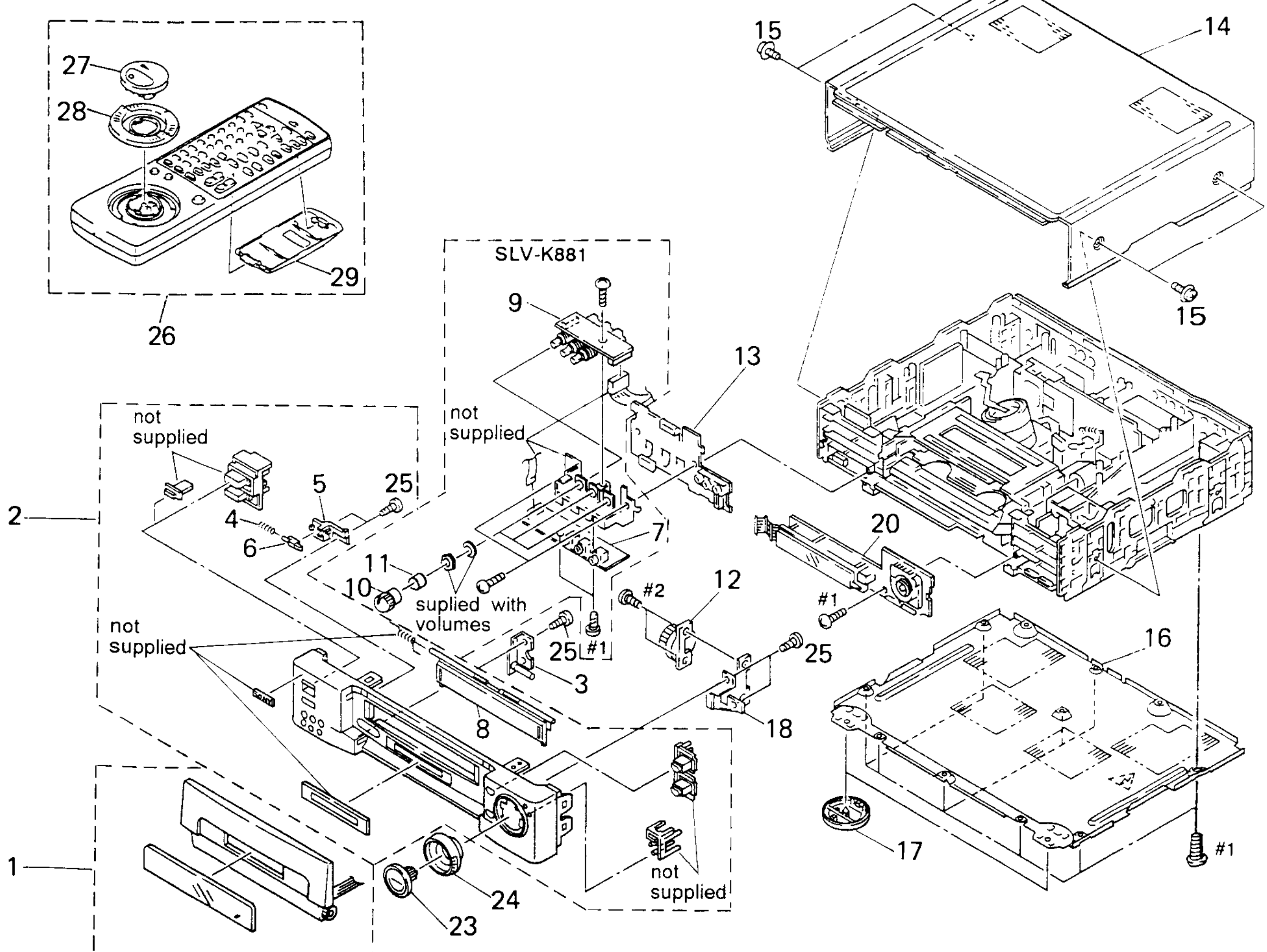
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

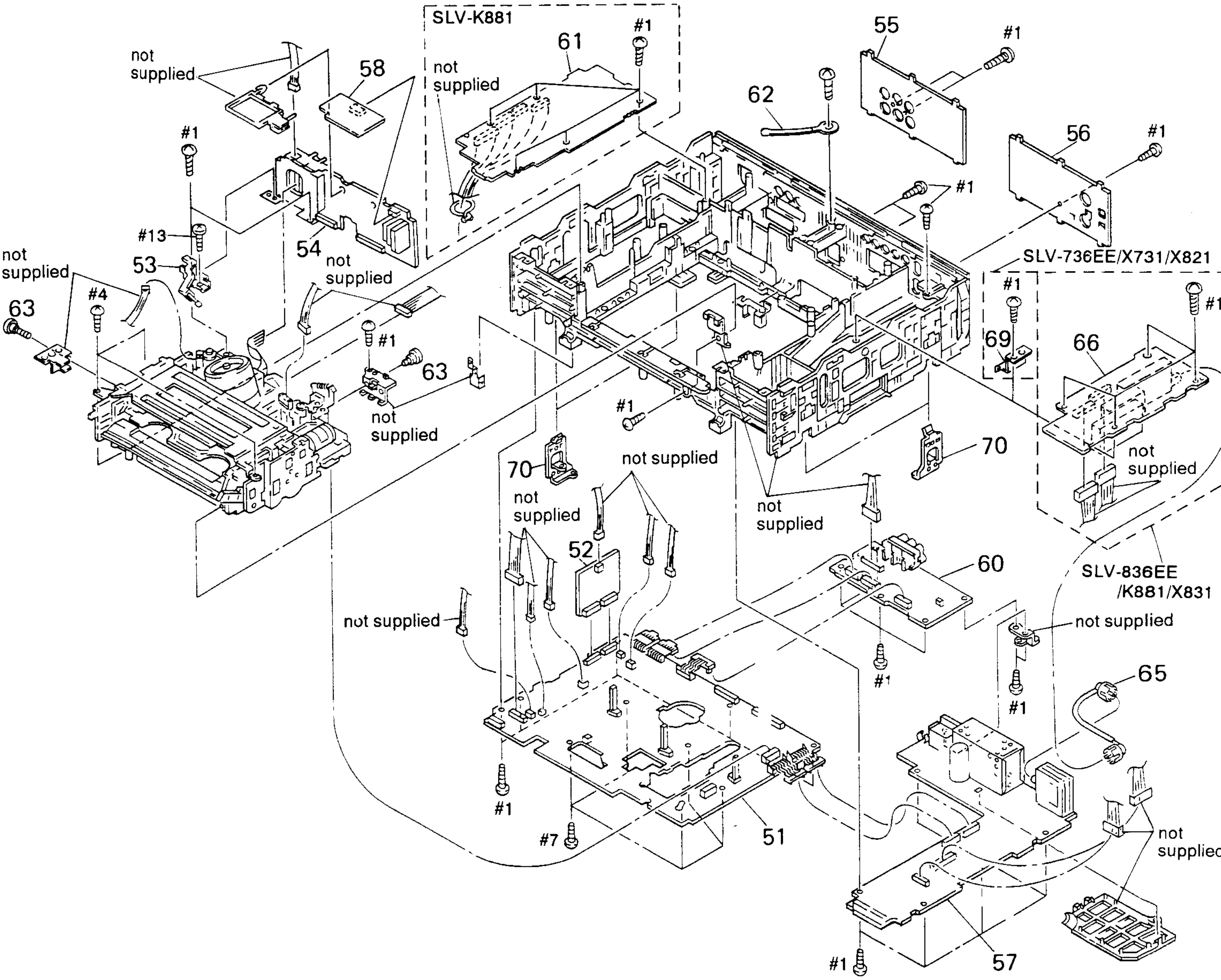
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

5-1-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	1-467-611-11	SWITCH BLOCK, CONTROL (K881)	
1	1-467-611-21	SWITCH BLOCK, CONTROL (X831)	
1	1-467-611-31	SWITCH BLOCK, CONTROL (736EE)	
1	1-467-611-41	SWITCH BLOCK, CONTROL (X821)	
1	1-467-611-51	SWITCH BLOCK, CONTROL (X731)	
1	1-467-611-61	SWITCH BLOCK, CONTROL (836EE)	
2	X-3943-737-1	PANEL ASSY, FRONT (K881)	
2	X-3943-760-1	PANEL ASSY, FRONT (X831)	
2	X-3943-761-1	PANEL ASSY, FRONT (836EE)	
2	X-3943-762-1	PANEL ASSY, FRONT (736EE)	
2	X-3943-763-1	PANEL ASSY, FRONT (X821)	
2	X-3943-764-1	PANEL ASSY, FRONT (X731)	
* 3	X-3943-736-1	PLATE, FULCRUM (LEFT) ASSY,	
4	3-957-388-01	SPRING, COMPRESSION	
* 5	3-957-312-11	HOLDER, LOCK CLAW	
6	3-944-564-01	CLAW, LOCK	
* 7	A-6720-622-A	MJ-63 BOARD, COMPLETE (K881)	
8	3-954-128-51	DOOR, CASSETTE (K881/X821/X831)	
8	3-954-128-61	DOOR, CASSETTE (736EE/836EE)	
8	3-954-128-71	DOOR, CASSETTE (X731)	
* 9	A-6720-621-A	VR-43 BOARD, COMPLETE (K881)	
10	3-957-948-01	KNOB (GT), VOL (K881)	
11	2-127-723-01	SPRING (KNOB) (K881)	
11	3-712-786-31	DAMPER, OIL	
* 13	A-6720-616-A	MF-245 BOARD, COMPLETE (K881)	
* 13	A-6720-624-A	MF-245 BOARD, COMPLETE (736EE/836EE/X821/X831)	
* 13	A-6720-629-A	MF-245 BOARD, COMPLETE (X731)	
* 14	3-957-938-01	CASE, UPPER	
15	3-710-901-11	SCREW, TAPPING	
* 16	3-957-939-01	PLATE, BOTTOM	
17	3-957-246-01	INSULATOR	
* 18	X-3943-735-1	PLATE, FULCRUM (RIGHT) ASSY,	
* 20	A-6720-617-A	MF-246 BOARD, COMPLETE (K881)	
* 20	A-6720-625-A	MF-246 BOARD, COMPLETE (X831)	
* 20	A-6720-626-A	MF-246 BOARD, COMPLETE (836EE)	
* 20	A-6720-627-A	MF-246 BOARD, COMPLETE (736EE)	
* 20	A-6720-628-A	MF-246 BOARD, COMPLETE (X821)	
* 20	A-6720-630-A	MF-246 BOARD, COMPLETE (X731)	
23	X-3943-591-1	BUTTON ASSY, FUNCTION (736EE/836EE)	
23	X-3943-738-1	BUTTON ASSY, FUNCTION (K881/X731/X821/X831)	
24	X-3943-556-1	RING ASSY, SHUTTLE (736EE/836EE)	
24	X-3943-739-1	RING ASSY, SHUTTLE (K881/X731/X821/X831)	
25	4-921-277-11	SCREW (B2.6X8), TAPPING, BIND	
26	1-467-606-11	REMOTE COMMANDER (RMT-V145) (K881)	
26	1-467-606-21	REMOTE COMMANDER (RMT-V145A) (736EE/836EE/X821/X831)	
26	1-467-606-31	REMOTE COMMANDER (RMT-V145B) (X731)	
27	X-3943-638-1	BUTTON ASSY	
28	3-957-513-11	SHUTTLE RING	
29	3-708-817-01	COVER, BATTERY	

5-1-2. CHASSIS ASSEMBLY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SLV-736EE/X731/X821
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SLV-836EE
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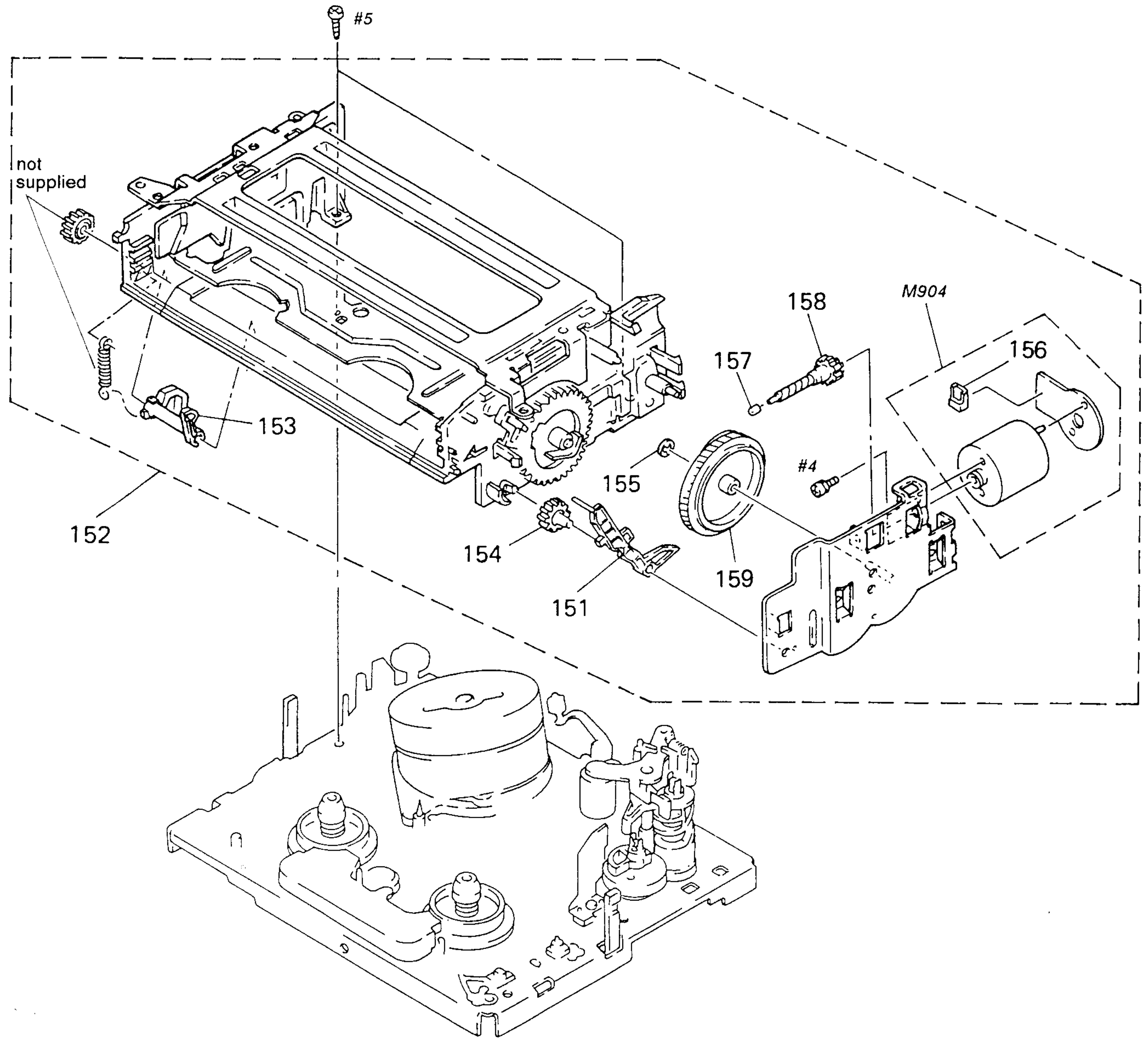
Ref. No.	Part No.	Description	Remark
* 51	A-6782-306-A	MA-202 BOARD, COMPLETE (K881)	
* 51	A-6782-307-A	MA-202 BOARD, COMPLETE (736EE/836EE/X821/X831)	
* 51	A-6782-308-A	MA-202 BOARD, COMPLETE (X731)	
* 52	A-6721-619-A	HF-34 BOARD, COMPLETE (EXCEPT X731)	
53	X-3943-595-1	GROUND ASSY (GT), SHAFT	
* 54	A-6727-565-A	RV-34 BOARD, COMPLETE (EXCEPT X731)	
* 54	A-6727-568-A	RV-34 BOARD, COMPLETE (X731)	
* 55	3-957-940-01	PLATE, JACK (I/O), REAR (EXCEPT X731)	
* 55	3-957-940-11	PLATE, JACK (I/O), REAR (X731)	
* 56	3-957-941-01	PLATE, JACK (TU), REAR (K881)	
* 56	3-957-941-11	PLATE, JACK (TU), REAR (X831)	
* 56	3-957-941-21	PLATE, JACK (TU), REAR (836EE)	
* 56	3-957-941-31	PLATE, JACK (TU), REAR (736EE)	
* 56	3-957-941-41	PLATE, JACK (TU), REAR (X821)	
* 56	3-957-941-51	PLATE, JACK (TU), REAR (X731)	
* 57	A-6727-564-A	PT-97 BOARD, COMPLETE (K881)	
* 57	A-6727-566-A	PT-97 BOARD, COMPLETE (836EE/X831)	
* 57	A-6727-569-A	PT-97 BOARD, COMPLETE (X731)	
* 57	A-6727-576-A	PT-97 BOARD, COMPLETE (736EE/X821)	
* 58	A-6720-620-A	SK-44 BOARD, COMPLETE	
* 60	A-6754-694-A	IO-51 BOARD, COMPLETE (K881)	
* 60	A-6754-695-A	IO-51 BOARD, COMPLETE (736EE/836EE/X821/X831)	
* 60	A-6754-696-A	IO-51 BOARD, COMPLETE (X731)	
* 61	A-6720-618-A	KR-24 BOARD, COMPLETE (K881)	
62	3-703-150-11	STOPPER, WIRING (EXCEPT K881)	
63	3-736-055-01	SCREW (3X8), TAPPING	
65	1-558-924-21	CABLE, PIN (736EE/X731/X821)	
65	1-558-924-41	CABLE, PIN (836EE/K881/X831)	
* 66	A-6720-623-A	TU-150 BOARD, COMPLETE (836EE/K881/X831)	
* 69	3-959-329-01	HOLDER, TU (736EE/X731/X821)	
* 70	3-957-387-01	STOPPER (GT), UPPER CASE	

5-1-3. FL CASSETTE COMPARTMENT ASSEMBLY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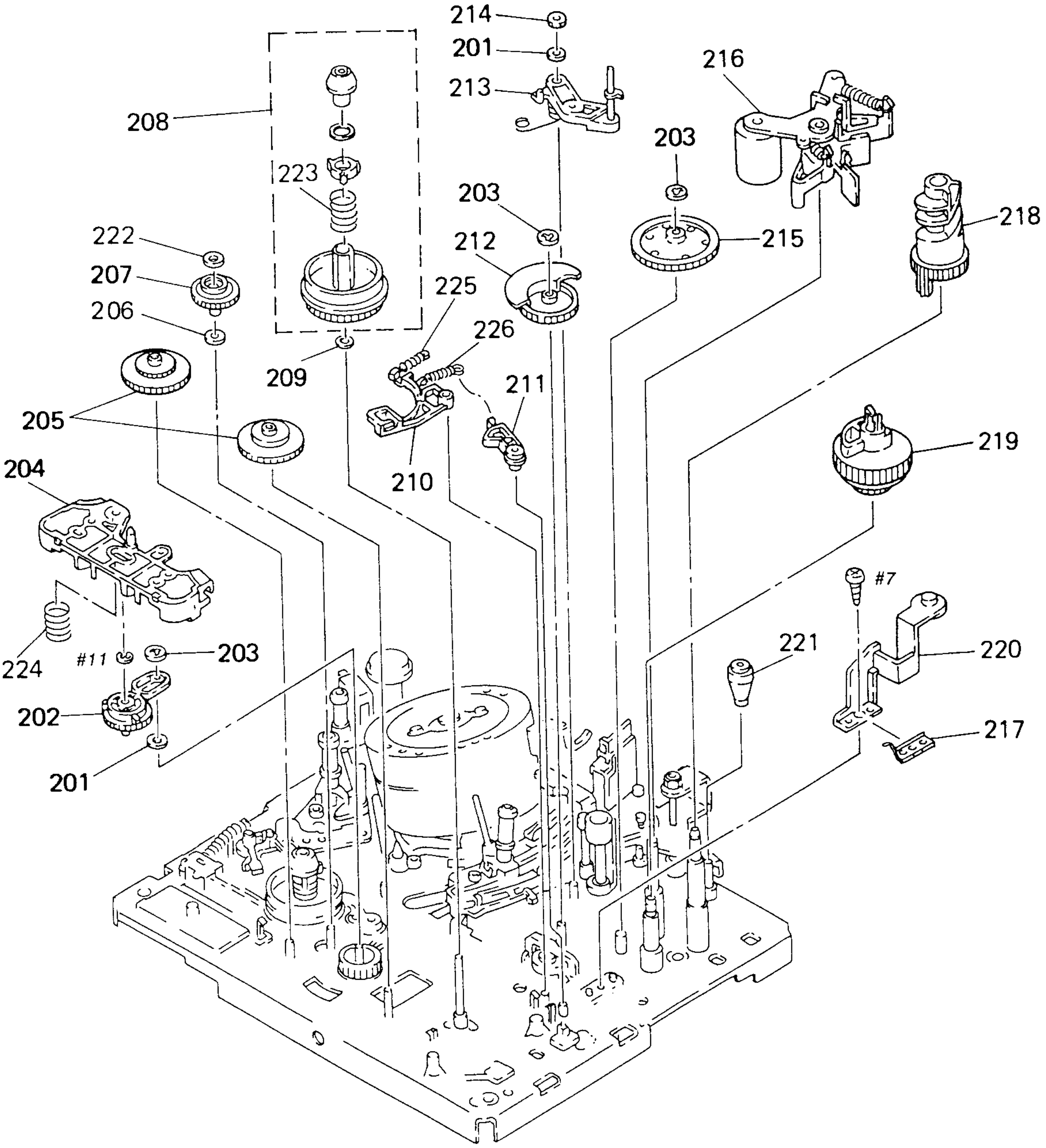
Ref. No.	Part No.	Description	Remark
151	3-741-935-06	LEVER, FLAT DOOR	
152	A-6751-421-A	FL BLOCK ASSY (M2)	
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
155	3-669-595-00	WASHER (2), STOPPER	
156	1-564-413-41	PIN, CONNECTOR 3P	
157	3-716-144-02	RETAINER, WORM	
158	3-736-100-01	GEAR (FL), WORM	
159	3-736-164-01	WHEEL (FL), WORM	
M904	X-3727-784-1	MOTOR ASSY	

5-1-4. MECHANISM CHASSIS ASSEMBLY (1)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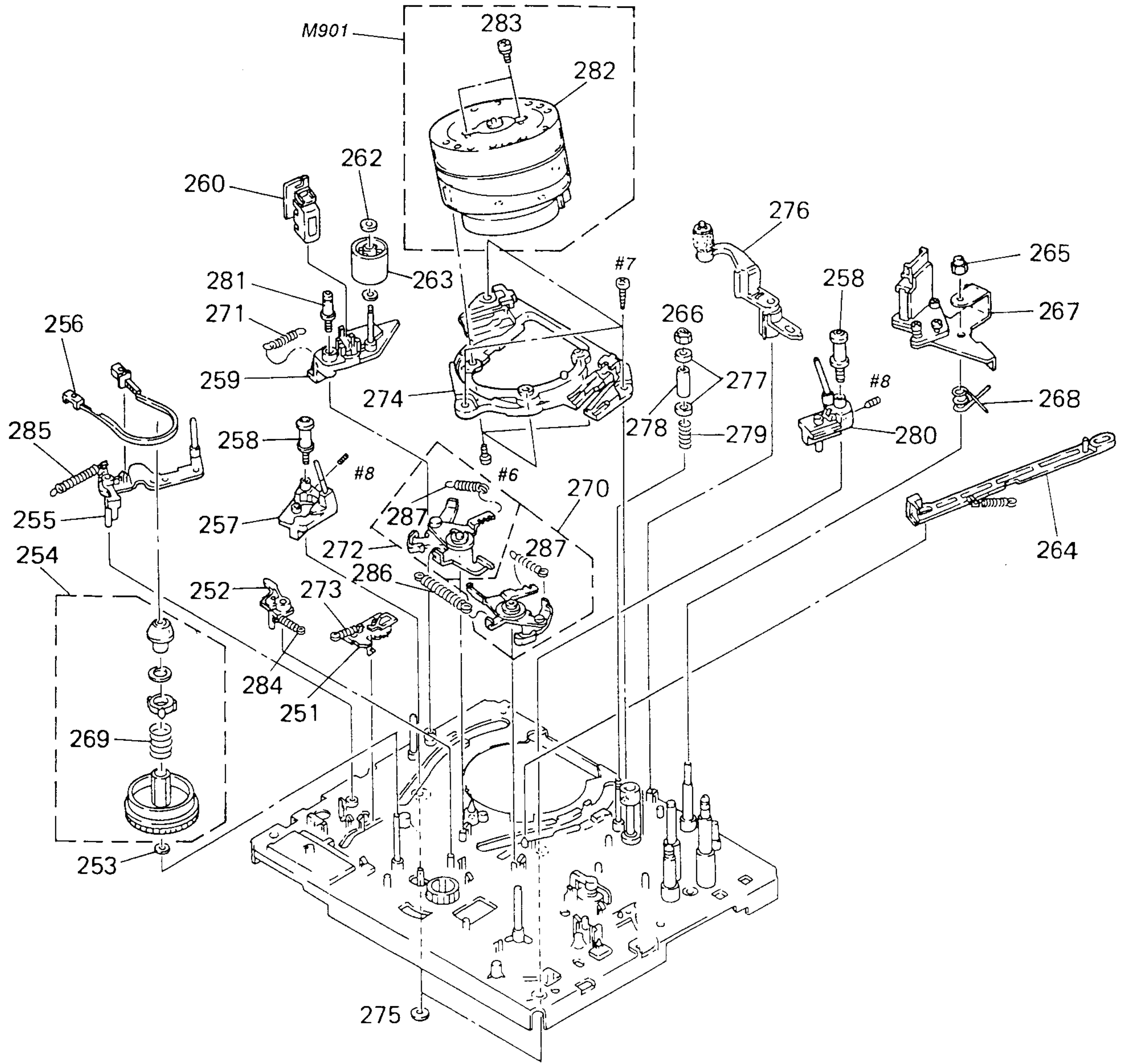
Ref. No.	Part No.	Description	Remark
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-789-1	TABLE ASSY, REEL	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	
213	X-3942-218-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
217	3-744-227-01	SPRING, FL GROUND	
218	3-952-182-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR, PRESS CAM	
220	3-946-652-01	OPENER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-069-01	RETAINER, SPRING	
223	3-739-621-01	SPRING, COMPRESSION	
224	3-736-020-11	SPRING, COMPRESSION	
225	3-736-024-01	SPRING, TENSION (FOR T SOFT BRAKE)	
226	3-736-025-01	SPRING, TENSION (REW BRAKE)	

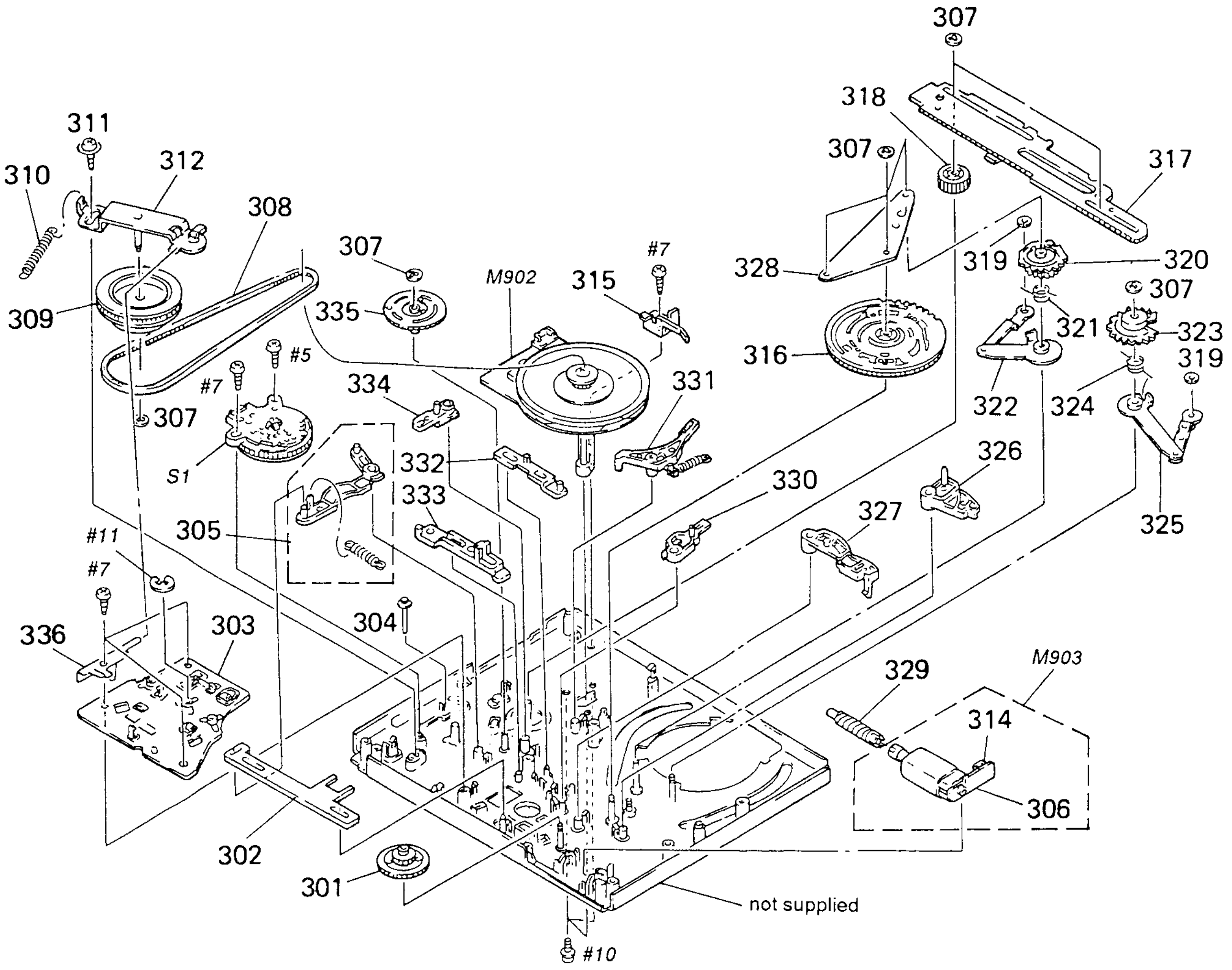
5-1-5. MECHANISM CHASSIS ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark
* 251	A-6759-483-A	TAKE-UP BLOCK ASSY, S	
252	X-3727-773-1	ARM ASSY (S), SOFT BRAKE	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	X-3727-772-5	ARM ASSY, TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3942-897-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
262	3-741-925-01	RING, RETAINING	
263	3-946-129 01	B STABLIZER	
264	X-3743-517-1	LEVER ASSY, RELEASE, C ROLLER	
265	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
266	3-942-866 01	NUT (M3) (3X0.5), NYLON	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3 946 148-01	SPRING, TORSION	
269	3-739-621-01	SPRING, COMPRESSION	
270	X-3729-926-1	BRAKE ASSY (2), T	

Ref. No.	Part No.	Description	Remark
271	3-736-745-01	SPRING, TENSION	
272	X-3733-336-2	BRAKE ASSY (2)AT, S	
273	3-738-284-01	SPRING, TENSION	
274	X-3727-791-2	DRUM (BASE) ASSY	
275	3-736-073-01	SLIDER, POLYETHYLENE	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-736-733-02	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	8-848-621-01	DRUM ASSY, ROTARY UPPER (DZR-54-R) (X7 31)	
282	8-848-625-01	DRUM ASSY, ROTARY UPPER (DZR-68-R) (EXCEPT X7 31)	
283	2-643-205-01	SCREW (PSW3X8)	
284	3 736 047 01	SPRING, TENSION (S SOFT)	
285	3-733-389-01	SPRING, TENSION (TENSION REGULATOR AT)	
286	3-738-221-01	SPRING, TENSION (MAIN BRKE 1)	
287	3 738 220 01	SPRING, TENSION (MAIN BRKE 2)	
M901	8-848-618-11	DRUM ASSY (DZH-54A-R) (X731)	
M901	8-848-624-11	DRUM ASSY (DZH-68A-R) (EXCEPT X731)	

5-1-6. MECHANISM CHASSIS ASSEMBLY (3)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Ref. No.	Part No.	Description	Remark
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-096-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM ASSY, PENDULUM FUNCTION	
* 306	1-633-460-11	CA-41 BOARD	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-749-796-11	SCREW, TAPPING +BVTP WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
314	1-564-013-41	PIN, CONNECTOR 3P	
315	3-736-744-01	RETAINER, ROTOR	
316	3-736-176-01	GEAR, CAM	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-069-01	RETAINER, SPRING	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, LOADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, LOADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	3-733-396-01	HOLDER, CAM GEAR	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3727-769-1	BRAKE ASSY, CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	3-741-950-01	SPRING PLATE, SC GROUND (AT)	
M902	8-835-489-01	MOTOR, DC U-26K	
M903	X-3733-302-1	MOTOR ASSY, CAM	
S1	1-571-920-11	SWITCH, ROTARY (CAM ENCODER)	

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
*	A-6721-619-A	HF-34 BOARD, COMPLETE (EXCEPT X731)	
		**********************	
		(Ref. No. 6,000Series)	
		< CAPACITOR >	
C101	1-124-907-11	ELECT 10uF 20% 50V	
C102	1-124-907-11	ELECT 10uF 20% 50V	
C103	1-124-927-11	ELECT 4.7uF 20% 100V	
C104	1-124-927-11	ELECT 4.7uF 20% 100V	
C105	1-124-126-00	ELECT 47uF 20% 10V	
C106	1-124-126-00	ELECT 47uF 20% 10V	
C107	1-124-126-00	ELECT 47uF 20% 10V	
C108	1-126-962-11	ELECT 3.3uF 20% 50V	
C109	1-126-962-11	ELECT 3.3uF 20% 50V	
C110	1-126-962-11	ELECT 3.3uF 20% 50V	
C111	1-126-962-11	ELECT 3.3uF 20% 50V	
C112	1-126-233-11	ELECT 22uF 20% 50V	
C113	1-126-233-11	ELECT 22uF 20% 50V	
C114	1-124-252-00	ELECT 0.33uF 20% 50V	
C115	1-124-443-00	ELECT 100uF 20% 10V	
C116	1-124-443-00	ELECT 100uF 20% 10V	
C117	1-104-792-51	ELECT 33uF 20% 16V	
C118	1-137-372-11	FILM 0.022uF 5% 50V	
C119	1-137-372-11	FILM 0.022uF 5% 50V	
C120	1-137-370-11	FILM 0.01uF 5% 50V	
C121	1-137-370-11	FILM 0.01uF 5% 50V	
C122	1-137-367-11	FILM 0.0033uF 5% 50V	
C123	1-137-367-11	FILM 0.0033uF 5% 50V	
C124	1-137-364-11	FILM 0.001uF 5% 50V	
C125	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C126	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C127	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C128	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C129	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C130	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C131	1-137-372-11	FILM 0.022uF 5% 50V	
C132	1-137-372-11	FILM 0.022uF 5% 50V	
C133	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C134	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C135	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
* CN101	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN102	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN103	1-564-013-11	PIN, CONNECTOR 3P	
CN103	1-506-482-11	PIN, CONNECTOR 3P	
		< DIODE >	
D101	8-719-404-46	DIODE MA110	
		< IC >	
IC101	8-759-188-81	IC XLH7776K-E2	
		< TRANSISTOR >	
⚠Q101	8-729-804-41	TRANSISTOR 2SB1122-S	
⚠Q102	8-729-820-68	TRANSISTOR 2SD1802FA-S	
Q103	8-729-421-19	TRANSISTOR UN2213	
Q104	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R101	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R102	1-216-678-11	METAL CHIP 13K 0.5% 1/10W	
R103	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R104	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R105	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R106	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R107	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R108	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R109	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R110	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R111	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R112	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R113	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R114	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R115	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R116	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R118	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R120	1-216-295-00	METAL CHIP 0 5% 1/10W	
R123	1-216-295-00	METAL CHIP 0 5% 1/10W	
R124	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV101	1-241-764-11	RES, ADJ, CERMET 10K
RV102	1-241-763-11	RES, ADJ, CERMET 4.7K
RV103	1-241-763-11	RES, ADJ, CERMET 4.7K
RV104	1-241-885-11	RES, ADJ, CERMET 470K
RV105	1-241-885-11	RES, ADJ, CERMET 470K

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* A-6754-694-A IO-51 BOARD, COMPLETE (K881)

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* A-6754-695-A IO-51 BOARD, COMPLETE

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(736EE/836EE/X831/X821)

* A-6754-696-A IO-51 BOARD, COMPLETE (X731)

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(Ref. No. 4,000Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remark
C604	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C605	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C606	1-124-589-11	ELECT	47uF	20%	16V	
C607	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C608	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C609	1-124-589-11	ELECT	47uF	20%	16V	
C612	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C613	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C616	1-124-257-00	ELECT	2.2uF	20%	50V	
C617	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V	
C618	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C619	1-124-589-11	ELECT	47uF	20%	16V	
C620	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C621	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C622	1-126-301-11	ELECT	1uF	20%	50V	
C623	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C624	1-124-589-11	ELECT	47uF	20%	16V	
C625	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C627	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C630	1-124-477-11	ELECT	47uF	20%	25V	
C631	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C632	1-124-589-11	ELECT	47uF	20%	16V	
C633	1-124-472-11	ELECT	470uF	20%	10V	
C634	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V	
C635	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C636	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V	
C640	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C651	1-124-589-11	ELECT	47uF	20%	16V	(EXCEPT X731)
C652	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(EXCEPT X731)
C653	1-124-589-11	ELECT	47uF	20%	16V	(EXCEPT X731)
C654	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(EXCEPT X731)
C655	1-124-589-11	ELECT	47uF	20%	16V	
C656	1-124-589-11	ELECT	47uF	20%	16V	
C657	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C658	1-124-925-11	ELECT	2.2uF	20%	100V	(EXCEPT X731)
C659	1-124-925-11	ELECT	2.2uF	20%	100V	(EXCEPT X731)
C660	1-124-907-11	ELECT	10uF	20%	50V	(EXCEPT X731)

< JACK >

Ref. No.	Part No.	Description	Remark
CJ601	1-565-320-71	JACK, PIN 6P (LINE IN/OUT)	(EXCEPT X731)
CJ601	1-568-185-21	JACK, PIN 4P (LINE IN/OUT)	(X731)

< CONNECTOR >

Ref. No.	Part No.	Description
* CN601	1-691-407-11	CONNECTOR, BOARD TO BOARD 10P
CN602	1-568-672-11	CONNECTOR, BOARD TO BOARD 12P
CN603	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P
CN604	1-506-476-11	PIN, CONNECTOR 11P (K881)
CN604	1-568-788-21	PIN, CONNECTOR 11P (K881)

< DIODE >

Ref. No.	Part No.	Description		Remark
D602	8-719-911-19	DIODE	1SS119	
D604	8-719-109-74	DIODE	RD4.3ES-B1	
D651	8-719-800-76	DIODE	1SS226	(EXCEPT X731)
D652	8-719-800-76	DIODE	1SS226	(EXCEPT X731)

< IC >

Ref. No.	Part No.	Description		Remark
IC601	8-759-255-24	IC	MB90089PF-109-ER	
IC602	8-759-164-09	IC	LA7218M-TE-R	
IC651	8-759-924-46	IC	BA4560F	(EXCEPT X731)
IC652	8-759-009-06	IC	MC14052BF	(EXCEPT X731)
IC653	8-759-909-71	IC	BA4558F	(EXCEPT X731)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			
JR602	1-216-295-00	METAL CHIP	0	5%	1/10W
JR605	1-216-295-00	METAL CHIP	0	5%	1/10W
JR606	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR607	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR608	1-216-295-00	METAL CHIP	0	5%	1/10W
JR609	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description	Remark
JR610	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR611	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

Ref. No.	Part No.	Description	Remark
L601	1-414-189-31	INDUCTOR 100uH	
L602	1-408-609-41	INDUCTOR 33uH	
L603	1-408-413-00	INDUCTOR 22uH	
L604	1-414-189-31	INDUCTOR 100uH	
L605	1-414-189-31	INDUCTOR 100uH	
L651	1-414-189-31	INDUCTOR 100uH (EXCEPT X731)	
L652	1-414-189-31	INDUCTOR 100uH (EXCEPT X731)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q601	8-729-216-22	TRANSISTOR 2SA1162-G	
Q602	8-729-216-22	TRANSISTOR 2SA1162-G	
Q603	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q604	8-729-421-22	TRANSISTOR UN2211	
Q605	8-729-424-08	TRANSISTOR UN2111	
Q607	8-729-216-22	TRANSISTOR 2SA1162-G	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R602	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R603	1-216-033-00	METAL CHIP 220 5% 1/10W	
R604	1-216-041-00	METAL CHIP 470 5% 1/10W	
R605	1-216-295-00	METAL CHIP 0 5% 1/10W	
R606	1-216-295-00	METAL CHIP 0 5% 1/10W	
R607	1-216-043-00	METAL CHIP 560 5% 1/10W	
R608	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R609	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R610	1-216-043-00	METAL CHIP 560 5% 1/10W	
R611	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R615	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R616	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R617	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R630	1-216-295-00	METAL CHIP 0 5% 1/10W	
R632	1-249-408-11	CARBON 180 5% 1/4W	F
R633	1-247-811-31	CARBON 150 5% 1/4W	
R634	1-216-021-00	METAL CHIP 68 5% 1/10W	
R651	1-216-085-00	METAL CHIP 33K 5% 1/10W (EXCEPT X731)	
R652	1-249-435-11	CARBON 33K 5% 1/4W (EXCEPT X731)	
R653	1-216-230-00	METAL GLAZE 22K 5% 1/8W (EXCEPT X731)	
R654	1-216-230-00	METAL GLAZE 22K 5% 1/8W (EXCEPT X731)	
R655	1-216-234-00	METAL GLAZE 33K 5% 1/8W (EXCEPT X731)	
R656	1-216-085-00	METAL CHIP 33K 5% 1/10W (EXCEPT X731)	
R657	1-216-083-00	METAL CHIP 27K 5% 1/10W (EXCEPT X731)	
R658	1-216-081-00	METAL CHIP 22K 5% 1/10W (EXCEPT X731)	
R659	1-249-433-11	CARBON 22K 5% 1/4W (EXCEPT X731)	
R660	1-216-081-00	METAL CHIP 22K 5% 1/10W (EXCEPT X731)	
R661	1-216-083-00	METAL CHIP 27K 5% 1/10W (EXCEPT X731)	
R662	1-216-085-00	METAL CHIP 33K 5% 1/10W (EXCEPT X731)	
R663	1-216-085-00	METAL CHIP 33K 5% 1/10W (EXCEPT X731)	
R664	1-216-081-00	METAL CHIP 22K 5% 1/10W (EXCEPT X731)	
R665	1-216-041-00	METAL CHIP 470 5% 1/10W	
R666	1-216-041-00	METAL CHIP 470 5% 1/10W	
R667	1-216-043-00	METAL CHIP 560 5% 1/10W (EXCEPT X731)	
R667	1-216-295-00	METAL CHIP 0 5% 1/10W(X731)	
R668	1-216-043-00	METAL CHIP 560 5% 1/10W	
R669	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R670	1-216-121-00	METAL CHIP 1M 5% 1/10W (EXCEPT X731)	
R671	1-216-101-00	METAL CHIP 150K 5% 1/10W (EXCEPT X731)	
R672	1-216-230-00	METAL GLAZE 22K 5% 1/8W (EXCEPT X731)	
R673	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (EXCEPT X731)	
R674	1-216-081-00	METAL CHIP 22K 5% 1/10W (EXCEPT X731)	
R675	1-216-081-00	METAL CHIP 22K 5% 1/10W (EXCEPT X731)	
R676	1-216-230-00	METAL GLAZE 22K 5% 1/8W (EXCEPT X731)	
R677	1-216-067-00	METAL CHIP 5.6K 5% 1/10W (EXCEPT X731)	
R678	1-216-101-00	METAL CHIP 150K 5% 1/10W (EXCEPT X731)	
R679	1-216-121-00	METAL CHIP 1M 5% 1/10W (EXCEPT X731)	
R680	1-216-049-00	METAL CHIP 1K 5% 1/10W (EXCEPT X731)	
R681	1-216-196-00	METAL GLAZE 820 5% 1/8W (EXCEPT X731)	
R690	1-216-022-00	METAL CHIP 75 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R692	1-216-073-00	METAL CHIP	10K	5%	1/10W
R693	1-216-295-00	METAL CHIP	0	5%	1/10W

< SWITCH >

Ref. No.	Part No.	Description
S601	1-692-686-11	SWITCH, SLIDE (NTSC PB)

< VIBRATOR >

Ref. No.	Part No.	Description
X601	1-577-289-11	VIBRATOR, CRYSTAL (17MHz)
X602	1-577-381-11	VIBRATOR, CRYSTAL (14MHz)
X603	1-577-165-11	VIBLATOR, CERAMIC (500KHz)

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* A-6720-618-A KR-24 BOARD, COMPLETE (K881)

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(Ref. No. 8,000Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-124-925-11	ELECT	2.2uF	20%	100V
C102	1-124-925-11	ELECT	2.2uF	20%	100V
C107	1-126-233-11	ELECT	22uF	20%	50V
C108	1-126-233-11	ELECT	22uF	20%	50V
C109	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C130	1-124-907-11	ELECT	10uF	20%	50V
C151	1-126-233-11	ELECT	22uF	20%	50V
C152	1-126-233-11	ELECT	22uF	20%	50V
C201	1-126-101-11	ELECT	100uF	20%	16V
C202	1-126-233-11	ELECT	22uF	20%	50V
C204	1-124-907-11	ELECT	10uF	20%	50V
C205	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C206	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C207	1-126-233-11	ELECT	22uF	20%	50V
C208	1-126-233-11	ELECT	22uF	20%	50V
C209	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C210	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C211	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C212	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C213	1-126-101-11	ELECT	100uF	20%	16V
C214	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C215	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C216	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C217	1-126-233-11	ELECT	22uF	20%	50V
C218	1-164-064-11	CERAMIC	56PF	5%	50V
C222	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C223	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C224	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C225	1-126-101-11	ELECT	100uF	20%	16V
C226	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C227	1-126-101-11	ELECT	100uF	20%	16V

Ref. No.	Part No.	Description			Remark
C228	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C229	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C230	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C231	1-126-233-11	ELECT	22uF	20%	50V
C232	1-126-233-11	ELECT	22uF	20%	50V
C233	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C234	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C241	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C252	1-126-233-11	ELECT	22uF	20%	50V
C254	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C255	1-126-233-11	ELECT	22uF	20%	50V
C256	1-126-233-11	ELECT	22uF	20%	50V
C259	1-124-925-11	ELECT	2.2uF	20%	100V
C260	1-126-233-11	ELECT	22uF	20%	50V
C261	1-126-233-11	ELECT	22uF	20%	50V
C262	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C263	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C264	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C265	1-126-233-11	ELECT	22uF	20%	50V
C266	1-126-233-11	ELECT	22uF	20%	50V
C267	1-126-233-11	ELECT	22uF	20%	50V
C268	1-124-925-11	ELECT	2.2uF	20%	100V
C269	1-124-925-11	ELECT	2.2uF	20%	100V
C271	1-124-478-11	ELECT	100uF	20%	25V
C272	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C301	1-126-233-11	ELECT	22uF	20%	50V
C302	1-126-233-11	ELECT	22uF	20%	50V
C303	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C304	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C305	1-124-925-11	ELECT	2.2uF	20%	100V
C306	1-124-925-11	ELECT	2.2uF	20%	100V
C307	1-124-925-11	ELECT	2.2uF	20%	100V
C308	1-124-925-11	ELECT	2.2uF	20%	100V
C309	1-124-907-11	ELECT	10uF	20%	50V
C310	1-126-233-11	ELECT	22uF	20%	50V
C311	1-126-233-11	ELECT	22uF	20%	50V
C312	1-126-233-11	ELECT	22uF	20%	50V
C313	1-126-233-11	ELECT	22uF	20%	50V
C314	1-124-907-11	ELECT	10uF	20%	50V
C319	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C322	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C324	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C350	1-124-925-11	ELECT	2.2uF	20%	100V
C351	1-124-925-11	ELECT	2.2uF	20%	100V
C352	1-124-925-11	ELECT	2.2uF	20%	100V
C353	1-124-902-00	ELECT	0.47uF	20%	50V
C354	1-124-464-11	ELECT	0.22uF	20%	50V

Ref. No.	Part No.	Description			Remark
C355	1-126-233-11	ELECT	22uF	20%	50V
C356	1-124-464-11	ELECT	0. 22uF	20%	50V
C362	1-124-907-11	ELECT	10uF	20%	50V
C363	1-124-907-11	ELECT	10uF	20%	50V
C364	1-124-907-11	ELECT	10uF	20%	50V
C365	1-124-907-11	ELECT	10uF	20%	50V
C401	1-124-907-11	ELECT	10uF	20%	50V
C402	1-124-907-11	ELECT	10uF	20%	50V
C403	1-124-907-11	ELECT	10uF	20%	50V
C404	1-124-907-11	ELECT	10uF	20%	50V
C405	1-124-907-11	ELECT	10uF	20%	50V
C410	1-124-925-11	ELECT	2. 2uF	20%	100V
C411	1-124-925-11	ELECT	2. 2uF	20%	100V
C423	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C424	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C425	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C426	1-163-031-11	CERAMIC CHIP	0. 01uF		50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN101	1-506-476-11	PIN, CONNECTOR 11P
CN103	1-506-476-11	PIN, CONNECTOR 11P
CN104	1-506-479-11	PIN, CONNECTOR 14P
* CN105	1-695-821-11	CONNECTOR, BOARD TO BOARD 12P

< DIODE >

Ref. No.	Part No.	Description	
D201	8-719-200-82	DIODE	11ES2
D202	8-719-017-09	DIODE	02DZ6. 2-TPH3
⚠D203	8-719-200-82	DIODE	11ES2
D204	8-719-200-82	DIODE	11ES2
D205	8-719-017-09	DIODE	02DZ6. 2-TPH3
D206	8-719-017-09	DIODE	02DZ6. 2-TPH3
D207	8-719-017-09	DIODE	02DZ6. 2-TPH3
D253	8-719-800-76	DIODE	1SS226
D255	8-719-800-76	DIODE	1SS226
D257	8-719-800-76	DIODE	1SS226
D301	8-719-800-76	DIODE	1SS226
D302	8-719-109-85	DIODE	RD5. 1ES-B2
D422	8-719-914-43	DIODE	DAN202K

< FILTER >

Ref. No.	Part No.	Description
FL201	1-236-071-11	ENCAPSULATED COMPONENT
FL203	1-236-071-11	ENCAPSULATED COMPONENT
FL301	1-239-201-11	FILTER, LOW PASS
FL302	1-239-201-11	FILTER, LOW PASS

< IC >

Ref. No.	Part No.	Description	
IC101	8-759-909-71	IC	BA4558F
IC201	8-752-851-93	IC	CXP50112-441Q
IC202	8-759-075-34	IC	LC83015
IC203	8-759-190-18	IC	LM3346G-12
IC204	8-759-177-10	IC	LC8390M
IC205	8-759-177-10	IC	LC8390M
IC251	8-759-909-71	IC	BA4558F
IC252	8-759-909-71	IC	BA4558F
IC301	8-759-909-71	IC	BA4558F
IC302	8-759-909-71	IC	BA4558F
⚠IC351	8-759-933-22	IC	BA3707
IC353	8-759-932-67	IC	BU4053BF
IC354	8-759-932-67	IC	BU4053BF
IC401	8-759-909-71	IC	BA4558F

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
JR101	1-216-295-00	METAL CHIP	0	5%	1/10W
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W
JR105	1-216-295-00	METAL CHIP	0	5%	1/10W
JR107	1-216-295-00	METAL CHIP	0	5%	1/10W
JR108	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR109	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR111	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR112	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR113	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR114	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR115	1-216-295-00	METAL CHIP	0	5%	1/10W
JR116	1-216-295-00	METAL CHIP	0	5%	1/10W
JR117	1-216-295-00	METAL CHIP	0	5%	1/10W
JR118	1-216-295-00	METAL CHIP	0	5%	1/10W
JR119	1-216-295-00	METAL CHIP	0	5%	1/10W
JR120	1-216-295-00	METAL CHIP	0	5%	1/10W
JR121	1-216-295-00	METAL CHIP	0	5%	1/10W
JR122	1-216-295-00	METAL CHIP	0	5%	1/10W
JR123	1-216-295-00	METAL CHIP	0	5%	1/10W
JR124	1-216-295-00	METAL CHIP	0	5%	1/10W
JR125	1-216-295-00	METAL CHIP	0	5%	1/10W
JR126	1-216-295-00	METAL CHIP	0	5%	1/10W
JR127	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR128	1-216-295-00	METAL CHIP	0	5%	1/10W
JR129	1-216-295-00	METAL CHIP	0	5%	1/10W
JR130	1-216-295-00	METAL CHIP	0	5%	1/10W
JR131	1-216-295-00	METAL CHIP	0	5%	1/10W
JR132	1-216-295-00	METAL CHIP	0	5%	1/10W
JR133	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR134	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR135	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR136	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR137	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR138	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR139	1-216-296-91	METAL GLAZE	0	5%	1/8W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
JR140	1-216-295-00	METAL CHIP	0	5%	1/10W
JR141	1-216-295-00	METAL CHIP	0	5%	1/10W
JR142	1-216-295-00	METAL CHIP	0	5%	1/10W
JR143	1-216-295-00	METAL CHIP	0	5%	1/10W
JR144	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR145	1-216-295-00	METAL CHIP	0	5%	1/10W
JR146	1-216-295-00	METAL CHIP	0	5%	1/10W
JR147	1-216-295-00	METAL CHIP	0	5%	1/10W
JR148	1-216-295-00	METAL CHIP	0	5%	1/10W
JR149	1-216-295-00	METAL CHIP	0	5%	1/10W
JR150	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR151	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR152	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR154	1-216-295-00	METAL CHIP	0	5%	1/10W
JR191	1-216-295-00	METAL CHIP	0	5%	1/10W
JR203	1-216-296-91	METAL GLAZE	0	5%	1/8W

< COIL >

Ref. No.	Part No.	Description	Remark
L201	1-408-417-00	INDUCTOR 47uH	
L202	1-408-417-00	INDUCTOR 47uH	
L203	1-408-417-00	INDUCTOR 47uH	
L204	1-408-417-00	INDUCTOR 47uH	
L206	1-408-417-00	INDUCTOR 47uH	
⚠L207	1-408-409-00	INDUCTOR 10uH	
L208	1-408-409-00	INDUCTOR 10uH	
L209	1-408-421-00	INDUCTOR 100uH	
⚠L351	1-408-417-00	INDUCTOR 47uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	
Q252	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q253	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q350	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q351	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q352	8-729-901-01	TRANSISTOR	DTC144EK
Q353	8-729-901-01	TRANSISTOR	DTC144EK
Q354	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q355	8-729-901-01	TRANSISTOR	DTC144EK
Q401	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q402	8-729-901-01	TRANSISTOR	DTC144EK
Q403	8-729-901-04	TRANSISTOR	DTA114EK
Q405	8-729-800-37	TRANSISTOR	2SD1048-X7
Q406	8-729-800-37	TRANSISTOR	2SD1048-X7

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R106	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R107	1-216-091-00	METAL CHIP	56K	5%	1/10W
R108	1-216-091-00	METAL CHIP	56K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R116	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R120	1-216-099-00	METAL CHIP	120K	5%	1/10W
R121	1-216-248-00	METAL GLAZE	120K	5%	1/8W
R130	1-216-049-00	METAL CHIP	1K	5%	1/10W
R204	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R205	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R206	1-216-077-00	METAL CHIP	15K	5%	1/10W
R207	1-216-077-00	METAL CHIP	15K	5%	1/10W
R208	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R211	1-216-099-00	METAL CHIP	120K	5%	1/10W
R212	1-216-075-00	METAL CHIP	12K	5%	1/10W
R213	1-216-099-00	METAL CHIP	120K	5%	1/10W
R214	1-216-075-00	METAL CHIP	12K	5%	1/10W
R215	1-216-099-00	METAL CHIP	120K	5%	1/10W
R216	1-216-075-00	METAL CHIP	12K	5%	1/10W
R254	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R255	1-216-081-00	METAL CHIP	22K	5%	1/10W
R256	1-249-418-11	CARBON	1.2K	5%	1/4W
R257	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R258	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R260	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R261	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R262	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R264	1-216-049-00	METAL CHIP	1K	5%	1/10W
R265	1-216-296-91	METAL GLAZE	0	5%	1/8W
R266	1-216-081-00	METAL CHIP	22K	5%	1/10W
R267	1-216-081-00	METAL CHIP	22K	5%	1/10W
R268	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R269	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R270	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R271	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R272	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R273	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R274	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R275	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R276	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R277	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R278	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R279	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R280	1-216-295-00	METAL CHIP	0	5%	1/10W
R281	1-216-295-00	METAL CHIP	0	5%	1/10W
R282	1-216-049-00	METAL CHIP	1K	5%	1/10W
R283	1-216-049-00	METAL CHIP	1K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R291	1-216-081-00	METAL CHIP	22K	5%	1/10W
R292	1-216-081-00	METAL CHIP	22K	5%	1/10W
R293	1-249-423-11	CARBON	3.3K	5%	1/4W F
R294	1-249-423-11	CARBON	3.3K	5%	1/4W F
R299	1-216-025-00	METAL CHIP	100	5%	1/10W
R301	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R302	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R303	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R304	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R305	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R306	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-043-00	METAL CHIP	560	5%	1/10W
R314	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R315	1-216-089-00	METAL CHIP	47K	5%	1/10W
R316	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R350	1-216-081-00	METAL CHIP	22K	5%	1/10W
R351	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R352	1-216-097-00	METAL CHIP	100K	5%	1/10W
R353	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R354	1-249-429-11	CARBON	10K	5%	1/4W
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W
R356	1-216-089-00	METAL CHIP	47K	5%	1/10W
R357	1-216-085-00	METAL CHIP	33K	5%	1/10W
R358	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R359	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R360	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R362	1-216-049-00	METAL CHIP	1K	5%	1/10W
R363	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R364	1-216-081-00	METAL CHIP	22K	5%	1/10W
R365	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R366	1-216-212-00	METAL GLAZE	3.9K	5%	1/8W
R367	1-216-113-00	METAL CHIP	470K	5%	1/10W
R368	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W
R370	1-216-073-00	METAL CHIP	10K	5%	1/10W
R372	1-216-073-00	METAL CHIP	10K	5%	1/10W
R373	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R374	1-216-073-00	METAL CHIP	10K	5%	1/10W
R375	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R376	1-249-424-11	CARBON	3.9K	5%	1/4W F
R377	1-249-424-11	CARBON	3.9K	5%	1/4W F
R378	1-216-113-00	METAL CHIP	470K	5%	1/10W
R379	1-216-113-00	METAL CHIP	470K	5%	1/10W
R380	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-216-073-00	METAL CHIP	10K	5%	1/10W
R402	1-216-081-00	METAL CHIP	22K	5%	1/10W
R403	1-216-081-00	METAL CHIP	22K	5%	1/10W
R404	1-216-081-00	METAL CHIP	22K	5%	1/10W
R409	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R410	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R412	1-216-081-00	METAL CHIP	22K	5%	1/10W
R413	1-216-095-00	METAL CHIP	82K	5%	1/10W
R416	1-216-081-00	METAL CHIP	22K	5%	1/10W
R417	1-216-095-00	METAL CHIP	82K	5%	1/10W
R420	1-216-081-00	METAL CHIP	22K	5%	1/10W

< VIBRATOR >

X201 1-567-192-11 OSCILLATOR, CERAMIC (4.00MHz)

****

* A-6782-306-A MA-202 BOARD, COMPLETE (K881)

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* A-6782-307-A MA-202 BOARD, COMPLETE

****

(736EE/836EE/X821/X831)

* A-6782-308-A MA-202 BOARD, COMPLETE (X731)

****

(Ref. No. 2,000Series)

< CAPACITOR >

C001	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C002	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C003	1-126-157-11	ELECT	10uF	20%	16V
C004	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C006	1-124-589-11	ELECT	47uF	20%	16V
C008	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C022	1-161-379-00	CERAMIC	0.01uF	20%	25V
C025	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C026	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C102	1-124-126-00	ELECT	47uF	20%	10V
C103	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C104	1-126-233-11	ELECT	22uF	20%	50V
C105	1-124-443-00	ELECT	100uF	20%	10V
C106	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C107	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-124-925-11	ELECT	2.2uF	20%	100V
C110	1-124-477-11	ELECT	47uF	20%	25V

MA-202

Ref. No.	Part No.	Description	Remark
C201	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C202	1-124-589-11	ELECT 47uF 20% 16V	
C203	1-126-101-11	ELECT 100uF 20% 16V	
C204	1-130-491-00	MYLAR 0.047uF 5% 50V	
C205	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C206	1-126-233-11	ELECT 22uF 20% 50V	
C207	1-137-372-11	FILM 0.022uF 5% 50V	
C208	1-124-257-00	ELECT 2.2uF 20% 50V	
C209	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C210	1-128-057-11	ELECT 330uF 20% 6.3V	
C211	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C212	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C213	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C214	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C215	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C230	1-162-282-31	CERAMIC 100PF 10% 50V	
C301	1-126-157-11	ELECT 10uF 20% 16V	
C302	1-126-157-11	ELECT 10uF 20% 16V	
C303	1-126-153-11	ELECT 22uF 20% 6.3V	
C304	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C351	1-126-157-11	ELECT 10uF 20% 16V	
C352	1-126-157-11	ELECT 10uF 20% 16V	
C353	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C356	1-126-157-11	ELECT 10uF 20% 16V	
C361	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C362	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C381	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C401	1-164-695-11	CERAMIC CHIP 0.0022uF 5% 50V	
C402	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C403	1-124-902-00	ELECT 0.47uF 20% 50V	
C404	1-124-907-11	ELECT 10uF 20% 50V	
C405	1-137-370-11	FILM 0.01uF 5% 50V	
C406	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C407	1-124-903-11	ELECT 1uF 20% 50V	
C408	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C409	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C410	1-124-907-11	ELECT 10uF 20% 50V	
C411	1-124-252-00	ELECT 0.33uF 20% 50V	
C412	1-124-261-00	ELECT 10uF 20% 50V	
C413	1-124-261-00	ELECT 10uF 20% 50V	
C414	1-130-493-00	MYLAR 0.068uF 5% 50V	
C415	1-124-903-11	ELECT 1uF 20% 50V	
C416	1-130-485-00	MYLAR 0.015uF 5% 50V	
C417	1-104-792-51	ELECT 33uF 20% 16V	
C418	1-104-792-51	ELECT 33uF 20% 16V	
C852	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C853	1-164-232-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT X731)
C854	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C855	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	(EXCEPT X731)
C856	1-104-696-11	FILM 0.015uF 5% 100V	(X731)
C856	1-137-612-11	FILM 0.0068uF 100V	(EXCEPT X731)
C857	1-104-697-11	FILM 0.047uF 5% 100V	(EXCEPT X731)
C858	1-104-695-11	FILM 330PF 5% 100V	
C859	1-124-120-11	ELECT 220uF 20% 25V	(X731)
C859	1-126-101-11	ELECT 100uF 20% 16V	(EXCEPT X731)
C860	1-126-101-11	ELECT 100uF 20% 16V	(EXCEPT X731)
		< CONNECTOR >	
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P	
CN003	1-691-643-11	CONNECTOR, BOARD TO BOARD	
CN005	1-506-468-11	PIN, CONNECTOR 3P	
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P	
CN101	1-506-468-11	PIN, CONNECTOR 3P	
CN201	1-506-470-11	PIN, CONNECTOR 5P	
* CN301	1-764-211-11	CONNECTOR, BOARD TO BOARD 13P	
CN302	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
* CN303	1-573-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN304	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
* CN402	1-695-821-11	CONNECTOR, BOARD TO BOARD 12P	
* CN405	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	(EXCEPT X731)
* CN406	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	(EXCEPT X731)
CN601	1-506-479-11	PIN, CONNECTOR 14P	(K881)
* CN801	1-691-409-11	CONNECTOR, BOARD TO BOARD 10P	
* CN802	1-764-210-11	CONNECTOR, BOARD TO BOARD 12P	
CN803	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
* CN854	1-560-892-00	PIN, CONNECTOR 4P	
* CN855	1-560-891-00	PIN, CONNECTOR 3P	
* CN857	1-560-892-00	PIN, CONNECTOR 4P	
		< DIODE >	
D001	8-719-985-00	DIODE GL451VS1	
D004	8-719-109-93	DIODE RD6.2ES-B2	
D005	8-719-109-93	DIODE RD6.2ES-B2	
D006	8-719-109-93	DIODE RD6.2ES-B2	
D007	8-719-109-93	DIODE RD6.2ES-B2	
D201	8-719-901-33	DIODE 1SS133	
D202	8-719-109-74	DIODE RD4.3ES-B1	
D203	8-719-109-81	DIODE RD4.7ES-B2	
D204	8-719-200-82	DIODE 11ES2	
D206	8-719-901-33	DIODE 1SS133	

Ref. No.	Part No.	Description	Remark
D353	8-719-911-19	DIODE 1SS119	
D354	8-719-801-78	DIODE 1SS184 (X731)	
D401	8-719-901-33	DIODE 1SS133 (K881/X731)	
D403	8-719-901-33	DIODE 1SS133 (K881/X731)	
D404	8-719-901-33	DIODE 1SS133	
D405	8-719-901-33	DIODE 1SS133	

< IC >

Ref. No.	Part No.	Description	Remark
IC002	8-759-983-74	IC LM324NS	
IC101	8-759-246-14	IC TA8823N	
⚠IC201	8-759-983-45	IC BA6238A	
IC202	8-759-981-48	IC RC082M2G2	
IC203	8-752-846-05	IC CXP80732-012Q (X731)	
IC203	8-752-851-96	IC CXP80732-014Q (EXCEPT X731)	
IC301	8-759-266-03	IC NJM2233BM(TE2)	
IC303	8-759-097-80	IC HD49783FP	
IC305	8-759-710-07	IC NJM2234M	
IC401	8-759-089-82	IC BA7790LS	
IC402	8-759-513-05	IC LVA521S	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR001	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR002	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR003	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR004	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR005	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR006	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR009	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR010	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR011	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR012	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR013	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR014	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR015	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR016	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR017	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR018	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR019	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR020	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR021	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR022	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR023	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR024	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR025	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR026	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR027	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR028	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR029	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR030	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR031	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR032	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR033	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR034	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR035	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR036	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR601	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR603	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR606	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR617	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR619	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT X731)

< COIL >

Ref. No.	Part No.	Description	Remark
L101	1-414-189-31	INDUCTOR 100uH	
L201	1-414-185-41	INDUCTOR 22uH	
L202	1-414-183-41	INDUCTOR 10uH	
L301	1-414-189-31	INDUCTOR 100uH	
L352	1-414-183-41	INDUCTOR 10uH	
L401	1-410-071-11	INDUCTOR 10mH	
L402	1-414-183-41	INDUCTOR 10uH	
L852	1-410-687-11	INDUCTOR 1.2mH	
L853	1-410-687-11	INDUCTOR 1.2mH (EXCEPT X731)	

< PHOTO INTERRUPTER >

Ref. No.	Part No.	Description	Remark
PH001	8-759-144-33	IC PS6002	
PH002	8-759-144-33	IC PS6002	

< IC LINK >

Ref. No.	Part No.	Description	Remark
⚠PS201	1-532-685-00	LINK, IC	
⚠PS851	1-532-679-00	LINK, IC	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q001	8-729-926-31	TRANSISTOR PT483F1S	
Q002	8-729-926-31	TRANSISTOR PT483F1S	
Q201	8-729-424-56	TRANSISTOR UN211L	
Q302	8-729-424-18	TRANSISTOR UN2113	
Q303	8-729-424-08	TRANSISTOR UN2111	
Q304	8-729-900-99	TRANSISTOR DTA144WK	
Q305	8-729-900-99	TRANSISTOR DTA144WK	
Q306	8-729-900-99	TRANSISTOR DTA144WK	
Q354	8-729-421-19	TRANSISTOR UN2213	
Q380	8-729-424-18	TRANSISTOR UN2113	
Q450	8-729-216-22	TRANSISTOR 2SA1162-G (X731)	
Q451	8-729-922-91	TRANSISTOR 2SD1757K-T146-S (X731)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

MA-202

Ref. No.	Part No.	Description			Remark
⚠Q851	8-729-012-31	TRANSISTOR	2SC4040-TL2-Q		
⚠Q852	8-729-012-31	TRANSISTOR	2SC4040-TL2-Q		(EXCEPT X731)
Q853	8-729-422-27	TRANSISTOR	2SD601A-Q		
⚠Q854	8-729-216-22	TRANSISTOR	2SA1162-G		
⚠Q855	8-729-216-22	TRANSISTOR	2SA1162-G		(EXCEPT X731)
		< RESISTOR >			
R001	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R002	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R003	1-249-426-11	CARBON	5.6K	5%	1/4W
R004	1-249-426-11	CARBON	5.6K	5%	1/4W
R005	1-216-045-00	METAL CHIP	680	5%	1/10W
R006	1-249-441-11	CARBON	100K	5%	1/4W
R007	1-216-097-00	METAL CHIP	100K	5%	1/10W
R008	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R009	1-216-180-00	METAL GLAZE	180	5%	1/8W
R010	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R011	1-216-089-00	METAL CHIP	47K	5%	1/10W
R012	1-249-421-11	CARBON	2.2K	5%	1/4W F
R015	1-216-089-00	METAL CHIP	47K	5%	1/10W
R016	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R017	1-216-073-00	METAL CHIP	10K	5%	1/10W
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W
R019	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R020	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R023	1-216-043-00	METAL CHIP	560	5%	1/10W
R024	1-216-089-00	METAL CHIP	47K	5%	1/10W
R025	1-216-089-00	METAL CHIP	47K	5%	1/10W
R101	1-247-901-11	CARBON	820K	5%	1/4W
R102	1-249-439-11	CARBON	68K	5%	1/4W
R103	1-249-441-11	CARBON	100K	5%	1/4W
R104	1-216-097-00	METAL CHIP	100K	5%	1/10W
R105	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R107	1-216-037-00	METAL CHIP	330	5%	1/10W
R108	1-216-025-00	METAL CHIP	100	5%	1/10W
R109	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R110	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R126	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R202	1-216-295-00	METAL CHIP	0	5%	1/10W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-429-11	CARBON	10K	5%	1/4W
R205	1-249-429-11	CARBON	10K	5%	1/4W
R206	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R207	1-216-089-00	METAL CHIP	47K	5%	1/10W
R208	1-216-049-00	METAL CHIP	1K	5%	1/10W
R209	1-216-240-00	METAL GLAZE	56K	5%	1/8W
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W
R211	1-216-660-11	METAL CHIP	2.4K	0.5%	1/10W
R212	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R213	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R214	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R215	1-216-079-00	METAL CHIP	18K	5%	1/10W
R216	1-216-049-00	METAL CHIP	1K	5%	1/10W
R218	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R219	1-249-431-11	CARBON	15K	5%	1/4W
R222	1-249-422-11	CARBON	2.7K	5%	1/4W F
R224	1-249-421-11	CARBON	2.2K	5%	1/4W F
R225	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R226	1-216-089-00	METAL CHIP	47K	5%	1/10W
R227	1-216-089-00	METAL CHIP	47K	5%	1/10W
R230	1-216-296-91	METAL GLAZE	0	5%	1/8W
R301	1-216-081-00	METAL CHIP	22K	5%	1/10W
R304	1-247-807-31	CARBON	100	5%	1/4W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R354	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W
R362	1-216-049-00	METAL CHIP	1K	5%	1/10W
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W
R364	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R365	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R366	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R367	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R368	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R370	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R371	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R372	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R374	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R375	1-216-017-00	METAL CHIP	47	5%	1/10W
R376	1-216-017-00	METAL CHIP	47	5%	1/10W
R377	1-216-025-00	METAL CHIP	100	5%	1/10W
R380	1-247-807-31	CARBON	100	5%	1/4W
R381	1-216-073-00	METAL CHIP	10K	5%	1/10W
R401	1-216-085-00	METAL CHIP	33K	5%	1/10W
R402	1-216-097-00	METAL CHIP	100K	5%	1/10W
R403	1-216-033-00	METAL CHIP	220	5%	1/10W
R404	1-216-109-00	METAL CHIP	330K	5%	1/10W
R405	1-216-075-00	METAL CHIP	12K	5%	1/10W
R406	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R407	1-216-085-00	METAL CHIP	33K	5%	1/10W
R408	1-216-079-00	METAL CHIP	18K	5%	1/10W (EXCEPT X731)
R408	1-216-083-00	METAL CHIP	27K	5%	1/10W (X731)
R409	1-216-129-00	METAL CHIP	2.2M	5%	1/10W

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⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description			Remark
R410	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R411	1-249-436-11	CARBON	39K	5%	1/4W
R414	1-249-428-11	CARBON	8.2K	5%	1/4W F
R415	1-249-436-11	CARBON	39K	5%	1/4W
R416	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R417	1-249-435-11	CARBON	33K	5%	1/4W (X731)
R418	1-216-033-00	METAL CHIP	220	5%	1/10W
R419	1-216-077-00	METAL CHIP	15K	5%	1/10W
R420	1-249-411-11	CARBON	330	5%	1/4W
R421	1-216-043-00	METAL CHIP	560	5%	1/10W
R422	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R423	1-216-089-00	METAL CHIP	47K	5%	1/10W
R424	1-216-085-00	METAL CHIP	33K	5%	1/10W (K881/X731)
R425	1-216-232-00	METAL GLAZE	27K	5%	1/8W (K881/X731)
R426	1-249-434-11	CARBON	27K	5%	1/4W
R450	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (X731)
R451	1-249-414-11	CARBON	560	5%	1/4W F (X731)
R452	1-216-049-00	METAL CHIP	1K	5%	1/10W (X731)
R854	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W (EXCEPT X731)
R855	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W (EXCEPT X731)
R856	1-216-097-00	METAL CHIP	100K	5%	1/10W (EXCEPT X731)
R856	1-216-689-11	METAL CHIP	39K	0.5%	1/10W(X731)
R857	1-216-097-00	METAL CHIP	100K	5%	1/10W (EXCEPT X731)
R858	1-216-089-00	METAL CHIP	47K	5%	1/10W
R859	1-216-073-00	METAL CHIP	10K	5%	1/10W
R860	1-216-234-00	METAL GLAZE	33K	5%	1/8W
R861	1-216-095-00	METAL CHIP	82K	5%	1/10W
R866	1-216-001-00	METAL CHIP	10	5%	1/10W
R867	1-216-295-00	METAL CHIP	0	5%	1/10W
R868	1-216-081-00	METAL CHIP	22K	5%	1/10W
R869	1-249-389-11	CARBON	4.7	5%	1/4W F (X731)
⚠R869	1-249-395-11	CARBON	15	5%	1/4W F (EXCEPT X731)
R870	1-216-083-00	METAL CHIP	27K	5%	1/10W (EXCEPT X731)
⚠R871	1-249-394-11	CARBON	12	5%	1/6W F (EXCEPT X731)
R898	1-249-417-11	CARBON	1K	5%	1/4W F (EXCEPT X731)
R899	1-249-417-11	CARBON	1K	5%	1/4W F

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV201	1-238-019-11	RES, ADJ, CARBON 47K	(EXCEPT X731)
RV202	1-238-019-11	RES, ADJ, CARBON 47K	
RV851	1-241-767-21	RES, ADJ, CARBON 100K	
		< SWITCH >	
S001	1-570-953-11	SWITCH, PUSH (1 KEY)	
S002	1-570-953-11	SWITCH, PUSH (1 KEY)	
		< TRANSFORMER >	
T851	1-423-413-11	TRANSFORMER, BIAS OSCILLATION	(EXCEPT X731)
T851	1-423-414-11	TRANSFORMER, BIAS OSCILLATION	(X731)
T852	1-423-415-11	TRANSFORMER, BIAS OSCILLATION	(EXCEPT X731)
		< VIBRATOR >	
X201	1-578-774-11	VIBRATOR, CRYSTAL (12MHz)	

****

* A-6720-616-A MF-245 BOARD, COMPLETE (K881)
****

* A-6720-624-A MF-245 BOARD, COMPLETE
****
(736EE/836EE/X831/X821)

* A-6720-629-A MF-245 BOARD, COMPLETE (X731)
****
(Ref.No. 5,000Series)

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C902	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN901	1-695-820-11	CONNECTOR, BOARD TO BOARD 12P			(K881)
* CN902	1-764-212-11	CONNECTOR, BOARD TO BOARD 13P			
* CN903	1-695-820-11	CONNECTOR, BOARD TO BOARD 12P			
		< DIODE >			
D902	8-719-109-93	DIODE	RD6.2ES-B2		
D903	8-719-940-99	LED	SLR34VC3		
D904	8-719-108-12	DIODE	RD9.1E-W		
D905	8-719-108-12	DIODE	RD9.1E-W		(EXCEPT X731)
D906	8-719-940-82	LED	SLR34MC3		
D907	8-719-108-12	DIODE	RD9.1E-W		
D908	8-719-940-82	LED	SLR34MC3		
D909	8-719-109-93	DIODE	RD6.2ES-B2		
D910	8-719-109-93	DIODE	RD6.2ES-B2		

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

MF-245 MF-246

Ref. No.	Part No.	Description	Remark
D911	8-719-109-93	DIODE RD6.2ES-B2	
D912	8-719-109-93	DIODE RD6.2ES-B2	
D913	8-719-109-93	DIODE RD6.2ES-B2	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remark
JR901	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR902	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR903	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR904	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR905	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR906	1-216-296-91	METAL GLAZE 0 5% 1/8W	

< JACK >

Ref. No.	Part No.	Description	Remark
PJ901	1-695-863-11	JACK, PIN 2P (LINE IN 2)(X731)	
PJ901	1-695-865-21	JACK, PIN 3P (LINE IN 2)(EXCEPT X731)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q901	8-729-901-04	TRANSISTOR DTA114EK	
Q902	8-729-421-19	TRANSISTOR UN2213	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R904	1-216-035-00	METAL CHIP 270 5% 1/10W	
R905	1-216-021-00	METAL CHIP 68 5% 1/10W	
R906	1-216-022-00	METAL CHIP 75 5% 1/10W	
R907	1-216-295-00	METAL CHIP 0 5% 1/10W	
R908	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT X731)
R909	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S901	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)	
S902	1-571-977-11	SWITCH, TACTIL (EJECT)	

****

Ref. No.	Part No.	Description	Remark
*	A-6720-617-A	MF-246 BOARD, COMPLETE (K881) **********************	
*	A-6720-625-A	MF-246 BOARD, COMPLETE (X831) **********************	
*	A-6720-626-A	MF-246 BOARD, COMPLETE (836EE) **********************	
*	A-6720-627-A	MF-246 BOARD, COMPLETE (736EE) **********************	
*	A-6720-628-A	MF-246 BOARD, COMPLETE (X821) **********************	
*	A-6720-630-A	MF-246 BOARD, COMPLETE (X731) **********************	

(Ref. No. 5,000Series)

Ref. No.	Part No.	Description	Remark
	3-697-607-01	HOLDER, LED	
*	3-957-949-01	HOLDER, INDICATION TUBE	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C101	1-163-098-00	CERAMIC CHIP 16PF 5% 50V	
C102	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C103	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C104	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C105	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C106	1-165-319-11	CERAMIC CHIP 0.1uF 50V	
C107	1-128-057-11	ELECT 330uF 20% 6.3V	
C108	1-165-319-11	CERAMIC CHIP 0.1uF 50V	
C109	1-104-905-11	CAP, DOUBLE LAYERS 0.22F	
C111	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C112	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C114	1-124-261-00	ELECT 10uF 20% 50V	
C115	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(K881)
C117	1-163-035-00	CERAMIC CHIP 0.047uF 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN101	1-692-726-11	SWITCH, ROTARY (LED)	
CN102	1-562-719-11	SOCKET, CONNECTOR 10P	
CN103	1-750-191-21	CONNECTOR, BOARD TO BOARD 20P	
* CN104	1-750-188-11	CONNECTOR, BOARD TO BOARD 14P	
* CN105	1-764-211-11	CONNECTOR, BOARD TO BOARD 13P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D106	8-719-946-30	LED SLR34DC3	
D107	8-719-812-32	LED TLY123	
D108	8-719-940-99	LED SLR34VC3	
D109	8-719-940-99	LED SLR34VC3	
D111	8-719-911-19	DIODE 1SS119	

Ref. No.	Part No.	Description	Remark
D112	8-719-200-82	DIODE 11ES2	
D113	8-719-109-93	DIODE RD6.2ES-B2	
D115	8-719-110-08	DIODE RD8.2ES-B2	
D117	8-719-400-20	DIODE MA152WA	(K881)
D117	8-719-914-44	DIODE DAP202K	(K881)
D118	8-719-400-20	DIODE MA152WA	(K881)
D118	8-719-914-44	DIODE DAP202K	(K881)
		< IC >	
IC101	8-759-255-25	IC MB89096PF-G-126-BND	
IC102	8-759-501-99	IC ST93C46AB1	
IC103	8-759-520-98	IC PST572K	
IC104	8-759-510-43	IC PST572C	
IC105	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	
IC106	8-759-932-79	IC BU4030BF	(K881)
		< JUMPER RESISTOR >	
JR102	1-216-295-00	METAL CHIP 0 5% 1/10W	(836EE/K881/X831)
JR103	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT X731)
JR104	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT X731)
JR107	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
JR112	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR113	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR120	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
JR121	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
JR122	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
JR198	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR199	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR996	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR998	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR999	1-216-296-91	METAL GLAZE 0 5% 1/8W	
		< COIL >	
L102	1-414-183-41	INDUCTOR 10uH	
		< FLUORESCENT INDICATOR >	
ND101	1-517-295-11	INDICATOR TUBE, FLUORESCENT	(X731)
ND101	1-517-296-11	INDICATOR TUBE, FLUORESCENT	(K881/X821/X831)
ND101	1-517-296-21	INDICATOR TUBE, FLUORESCENT	(736EE/836EE)
		< TRANSISTOR >	
Q101	8-729-421-19	TRANSISTOR UN2213	
Q102	8-729-421-19	TRANSISTOR UN2213	
Q103	8-729-421-19	TRANSISTOR UN2213	(EXCEPT X731)

Ref. No.	Part No.	Description	Remark
Q104	8-729-421-19	TRANSISTOR UN2213	(EXCEPT X731)
Q105	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R101	1-216-079-00	METAL CHIP 18K 5% 1/10W	(EXCEPT X731)
R102	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R103	1-216-031-00	METAL CHIP 180 5% 1/10W	
R104	1-216-031-00	METAL CHIP 180 5% 1/10W	
R105	1-216-031-00	METAL CHIP 180 5% 1/10W	
R106	1-216-031-00	METAL CHIP 180 5% 1/10W	
R107	1-249-411-11	CARBON 330 5% 1/4W	
R108	1-216-031-00	METAL CHIP 180 5% 1/10W	
R109	1-216-035-00	METAL CHIP 270 5% 1/10W	(EXCEPT X731)
R109	1-216-184-00	METAL GLAZE 270 5% 1/8W	(X731)
R110	1-216-035-00	METAL CHIP 270 5% 1/10W	
R111	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R112	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R114	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R115	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R116	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R118	1-216-295-00	METAL CHIP 0 5% 1/10W	
R119	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R120	1-216-033-00	METAL CHIP 220 5% 1/10W	
R121	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R122	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R123	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R124	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R125	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT X731)
R126	1-216-182-00	METAL GLAZE 220 5% 1/8W	(K881)
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R128	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R129	1-216-033-00	METAL CHIP 220 5% 1/10W	
R130	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R132	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R133	1-216-295-00	METAL CHIP 0 5% 1/10W	
R134	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R135	1-216-295-00	METAL CHIP 0 5% 1/10W	
R138	1-216-295-00	METAL CHIP 0 5% 1/10W	
R139	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R140	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
R141	1-216-295-00	METAL CHIP 0 5% 1/10W	(K881)
R142	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(X731)
R143	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R144	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT K881)
R145	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(X831)

Ref. No.	Part No.	Description			Remark
R145	1-216-065-00	METAL CHIP	4.7K	5%	1/10W(836EE)
R145	1-216-070-00	METAL CHIP	7.5K	5%	1/10W(736EE)
R145	1-216-077-00	METAL CHIP	15K	5%	1/10W(X821)
R145	1-216-295-00	METAL CHIP	0	5%	1/10W(K881)
R146	1-216-295-00	METAL CHIP	0	5%	1/10W(K881)
R147	1-216-049-00	METAL CHIP	1K	5%	1/10W
R148	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R149	1-216-049-00	METAL CHIP	1K	5%	1/10W
R151	1-216-095-00	METAL CHIP	82K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-296-91	METAL GLAZE	0	5%	1/8W (EXCEPT X731)
R155	1-216-049-00	METAL CHIP	1K	5%	1/10W
R156	1-216-049-00	METAL CHIP	1K	5%	1/10W
R157	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R158	1-216-113-00	METAL CHIP	470K	5%	1/10W
R159	1-216-073-00	METAL CHIP	10K	5%	1/10W
R160	1-216-073-00	METAL CHIP	10K	5%	1/10W
R161	1-216-080-00	METAL CHIP	20K	5%	1/10W (EXCEPT X731)
R162	1-216-222-00	METAL GLAZE	10K	5%	1/8W (X731)
R165	1-216-073-00	METAL CHIP	10K	5%	1/10W
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R167	1-216-073-00	METAL CHIP	10K	5%	1/10W
R168	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R169	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R171	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT K811)
R175	1-216-073-00	METAL CHIP	10K	5%	1/10W(K881)

< SWITCH >

S101	1-571-977-11	SWITCH, TACTIL (HI-SPEED REWIND)
S102	1-571-977-11	SWITCH, TACTIL (PAUSE)
S103	1-692-726-11	SWITCH, ROTARY (LED)(PLAY/STOP/REW/FF)

< VIBRATOR >

X101	1-579-436-11	VIBLATOR, CRYSTAL (32KHz)
X102	1-579-175-11	VIBRATOR, CERAMIC (10MHz)

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Ref. No.	Part No.	Description	Remark
*	A-6720-622-A	MJ-63 BOARD, COMPLETE (K881)	

****

(Ref. No. 8,000Series)

< CAPACITOR >

C901	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C902	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C903	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C904	1-126-163-11	ELECT	4.7uF	20%	50V
C905	1-126-163-11	ELECT	4.7uF	20%	50V
C906	1-124-261-00	ELECT	10uF	20%	50V
C907	1-124-261-00	ELECT	10uF	20%	50V
C908	1-124-261-00	ELECT	10uF	20%	50V
C909	1-124-261-00	ELECT	10uF	20%	50V

< CONNECTOR >

CN901	1-563-585-11	CONNECTOR, FLEXIBLE 8P

< DIODE >

D901	8-719-109-96	DIODE RD6.8ES-B1
D902	8-719-109-96	DIODE RD6.8ES-B1

< IC >

IC901	8-759-909-71	IC BA4558F

< JACK >

J901	1-750-781-11	JACK, LARGE TYPE (MIC IN 1)
J902	1-750-781-11	JACK, LARGE TYPE (MIC IN 2)
J903	1-507-678-00	JACK (CONTROL)

< RESISTOR >

R901	1-216-049-00	METAL CHIP	1K	5%	1/10W
R902	1-216-049-00	METAL CHIP	1K	5%	1/10W
R903	1-216-081-00	METAL CHIP	22K	5%	1/10W
R904	1-216-081-00	METAL CHIP	22K	5%	1/10W
R905	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R906	1-216-091-00	METAL CHIP	56K	5%	1/10W
R907	1-216-091-00	METAL CHIP	56K	5%	1/10W
R908	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R909	1-216-097-00	METAL CHIP	100K	5%	1/10W
R910	1-216-097-00	METAL CHIP	100K	5%	1/10W
R911	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R912	1-216-053-00	METAL CHIP	1.5K	5%	1/10W

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Ref. No.	Part No.	Description	Remark
*	A-6727-564-A	PT-97 BOARD, COMPLETE (K881) **********************	
*	A-6727-566-A	PT-97 BOARD, COMPLETE (836EE/X831) **********************	
*	A-6727-569-A	PT-97 BOARD, COMPLETE (X731) **********************	
*	A-6727-576-A	PT-97 BOARD, COMPLETE (736EE/X821) **********************	
			(Ref. No. 3,000Series)
	1-533-293-11	FUSE HOLDER	
*	3-951-893-01	HEAT SINK	
	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
		< BUZZER >	
BZ701	1-529-080-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C702	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(736EE/X731/X821)
C703	1-124-927-11	ELECT 4.7uF 20% 100V	(736EE/X731/X821)
C704	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(736EE/X731/X821)
C705	1-124-126-00	ELECT 47uF 20% 10V	(736EE/X731/X821)
C706	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(736EE/X731/X821)
C707	1-126-101-11	ELECT 100uF 20% 16V	(736EE/X731/X821)
C708	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(736EE/X731/X821)
C709	1-124-126-00	ELECT 47uF 20% 10V	(736EE/X731/X821)
C710	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(736EE/X731/X821)
C711	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(736EE/X731/X821)
C713	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(736EE/X731/X821)
C714	1-126-233-11	ELECT 22uF 20% 50V	(736EE/X731/X821)
C717	1-162-199-31	CERAMIC 10PF 5% 50V	
C718	1-162-199-31	CERAMIC 10PF 5% 50V	
C719	1-124-907-11	ELECT 10uF 20% 50V	(736EE/X731/X821)
C722	1-163-016-00	CERAMIC CHIP 0.0039uF 10% 50V	(736EE/X821)
C723	1-163-016-00	CERAMIC CHIP 0.0039uF 10% 50V	(736EE/X821)
C724	1-163-016-00	CERAMIC CHIP 0.0039uF 10% 50V	(736EE/X731/X821)
C726	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C733	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C730	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(736EE/X731/X821)
C731	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(736EE/X731/X821)
C732	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	(736EE/X731/X821)
C734	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	(736EE/X731/X821)
C735	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	(736EE/X731/X821)
C736	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	(736EE/X731/X821)
C737	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(736EE/X731/X821)
C738	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(736EE/X731/X821)
C739	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(736EE/X731/X821)
C750	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(736EE/X731/X821)
C751	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	(736EE/X731/X821)
C752	1-124-443-00	ELECT 100uF 20% 10V	
C753	1-126-233-11	ELECT 22uF 20% 50V	
C756	1-124-443-00	ELECT 100uF 20% 10V	
C761	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(736EE/X731/X821)
C762	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(736EE/X731/X821)
C763	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	(736EE/X731/X821)
C790	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
⚠C801	1-104-705-11	FILM 0.1uF 20% 250V	
⚠C802	1-104-705-11	FILM 0.1uF 20% 250V	
⚠C803	1-107-414-11	ELECT 220uF 20% 400V	(X731)
⚠C803	1-107-851-11	ELECT 270uF 20% 400V	(736EE/836EE/X821/X831)
⚠C803	1-107-852-11	ELECT 330uF 20% 400V	(K881)
⚠C804	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C805	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C806	1-161-741-00	CERAMIC 0.001uF 10% 400V	
⚠C807	1-161-741-00	CERAMIC 0.001uF 10% 400V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

PT-97

Ref. No.	Part No.	Description			Remark
⚠C808	1-161-741-00	CERAMIC	0.001uF	10%	400V
C810	1-124-360-00	ELECT	1000uF	20%	16V
C811	1-124-471-00	ELECT	1000uF	20%	6.3V
C812	1-124-120-11	ELECT	220uF	20%	25V
C814	1-124-477-11	ELECT	47uF	20%	25V
C815	1-126-101-11	ELECT	100uF	20%	16V
C816	1-124-443-00	ELECT	100uF	20%	10V
C818	1-124-477-11	ELECT	47uF	20%	25V
C819	1-124-442-00	ELECT	330uF	20%	6.3V
C821	1-124-442-00	ELECT	330uF	20%	6.3V
C822	1-124-477-11	ELECT	47uF	20%	25V
C823	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C824	1-124-910-11	ELECT	47uF	20%	50V
C826	1-124-910-11	ELECT	47uF	20%	50V
C829	1-124-477-11	ELECT	47uF	20%	25V
C830	1-126-103-11	ELECT	470uF	20%	16V
C831	1-163-031-11	CERAMIC CHIP	0.01uF		50V

< INLET AC >

⚠CJ801	1-251-134-11	INLET, AC (NONPOLAR)(AC IN)

< CONNECTOR >

CN701	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P
* CN702	1-764-212-11	CONNECTOR, BOARD TO BOARD 13P
CN703	1-750-200-21	CONNECTOR, BOARD TO BOARD 20P
* CN704	1-750-197-11	CONNECTOR, BOARD TO BOARD 14P
CN705	1-506-480-11	PIN, CONNECTOR 15P (836EE/K881/X831)
CN706	1-506-479-11	PIN, CONNECTOR 14P (836EE/K881/X831)

< COMPOSITION CIRCUIT BLOCK >

⚠CP801	1-413-948-11	POWER BLOCK
⚠CP802	1-426-673-11	UNIT, DC-DC CONVERTER

< DIODE >

D701	8-719-800-76	DIODE	1SS226	(736EE/X731/X821)
D702	8-719-110-78	DIODE	RD33ES-B2	(736EE/X731/X821)
⚠D704	8-719-109-97	DIODE	RD6.8ES-B2	
⚠D705	8-719-109-97	DIODE	RD6.8ES-B2	
D708	8-719-109-97	DIODE	RD6.8ES-B2	
D709	8-719-109-97	DIODE	RD6.8ES-B2	
D751	8-719-911-19	DIODE	1SS119	
⚠D752	8-719-911-19	DIODE	1SS119	
⚠D753	8-719-911-19	DIODE	1SS119	
D754	8-719-104-34	DIODE	1S2836	(736EE/X731/X821)
D755	8-719-104-34	DIODE	1S2836	(736EE/X731/X821)
D756	8-719-104-34	DIODE	1S2836	(736EE/X731/X821)
D761	8-719-109-93	DIODE	RD6.2ES-B2	
D762	8-719-109-93	DIODE	RD6.2ES-B2	

Ref. No.	Part No.	Description		Remark
D763	8-719-109-93	DIODE	RD6.2ES-B2	
⚠D801	8-719-510-06	DIODE	S1WB60	
⚠D810	8-719-200-82	DIODE	11ES2	
⚠D811	8-719-911-19	DIODE	1SS119	
⚠D862	8-719-109-85	DIODE	RD5.1ES-B2	

< FILTER >

FL750	1-567-100-00	FILTER, CERAMIC (736EE/X731/X821)
FL751	1-567-101-11	FILTER, CERAMIC (736EE/X731/X821)
FL752	1-567-099-00	FILTER, CERAMIC (736EE/X731/X821)

< FUSE >

⚠F801	1-576-228-11	FUSE (H.B.C.)(T2A 250V)

< IC >

IC750	8-759-729-03	IC	NJM2903D	(736EE/X731/X821)
⚠IC810	8-759-189-48	IC	PQ12RE11	
⚠IC811	8-759-189-49	IC	PQ09NF1S	

< JUMPER RESISTOR >

JR702	1-216-295-00	METAL CHIP	0	5%	1/10W
JR704	1-216-295-00	METAL CHIP	0	5%	1/10W
JR710	1-216-295-00	METAL CHIP	0	5%	1/10W
JR711	1-216-295-00	METAL CHIP	0	5%	1/10W
JR713	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR714	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR715	1-216-295-00	METAL CHIP	0	5%	1/10W
JR717	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR720	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR730	1-216-295-00	METAL CHIP	0	5%	1/10W
JR731	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR732	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR733	1-216-295-00	METAL CHIP	0	5%	1/10W
JR734	1-216-295-00	METAL CHIP	0	5%	1/10W
JR997	1-216-296-91	METAL GLAZE	0	5%	1/8W

< COIL >

L701	1-414-189-31	INDUCTOR	100uH	(736EE/X731/X821)
L702	1-414-183-41	INDUCTOR	10uH	(736EE/X731/X821)
L703	1-410-509-11	INDUCTOR	10uH	(736EE/X731/X821)
L751	1-414-179-21	INDUCTOR	2.2uH	
L752	1-408-417-00	INDUCTOR	47uH	
L760	1-408-405-00	INDUCTOR	4.7uH	
L761	1-408-405-00	INDUCTOR	4.7uH	
L762	1-410-521-11	INDUCTOR	100uH	(736EE/X731/X821)
L763	1-410-521-11	INDUCTOR	100uH	(836EE/K881/X831)
L812	1-414-183-41	INDUCTOR	10uH	
⚠L813	1-403-588-11	CIL, CHOKE	22uH	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠L821	1-403-588-11	CIL, CHOKE 22uH	
⚠L822	1-403-588-11	CIL, CHOKE 22uH	
		< LINE FILTER >	
⚠LF801	1-424-117-11	FILTER, LINE	
⚠LF802	1-424-117-11	FILTER, LINE	
		< IC LINK >	
PS811	1-532-675-00	LINK, IC 1.5A	
⚠PS812	1-532-637-00	LINK, IC 1.0A	
⚠PS813	1-532-637-00	LINK, IC 1.0A	
		< TRANSISTOR >	
Q701	8-729-173-38	TRANSISTOR 2SA733-K	(736EE/X731/X821)
Q702	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q703	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q710	8-729-421-19	TRANSISTOR UN2213	
Q711	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q712	8-729-421-19	TRANSISTOR UN2213	
Q713	8-729-216-22	TRANSISTOR 2SA1162-G	
Q714	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q715	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q716	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q717	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q718	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q719	8-729-422-27	TRANSISTOR 2SD601A-Q	(736EE/X731/X821)
Q750	8-729-421-19	TRANSISTOR UN2213	
⚠Q810	8-729-140-93	TRANSISTOR 2SB733-34	
Q811	8-729-421-22	TRANSISTOR UN2211	
⚠Q812	8-729-140-98	TRANSISTOR 2SD773-34	
		< RESISTOR >	
R701	1-216-380-11	METAL OXIDE 8.2 5% 2W	F(X731)
R706	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R707	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R708	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R709	1-216-295-00	METAL CHIP 0 5% 1/10W	
R710	1-216-295-00	METAL CHIP 0 5% 1/10W	
R711	1-216-025-00	METAL CHIP 100 5% 1/10W	(736EE/X731/X821)
R712	1-216-089-00	METAL CHIP 47K 5% 1/10W	(736EE/X731/X821)
R713	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	(736EE/X731/X821)
R714	1-216-075-00	METAL CHIP 12K 5% 1/10W	(736EE/X731/X821)
R715	1-216-049-00	METAL CHIP 1K 5% 1/10W	(736EE/X731/X821)
R718	1-216-025-00	METAL CHIP 100 5% 1/10W	(736EE/X731/X821)
R719	1-216-037-00	METAL CHIP 330 5% 1/10W	(736EE/X731/X821)
R720	1-216-037-00	METAL CHIP 330 5% 1/10W	(736EE/X731/X821)
R723	1-249-417-11	CARBON 1K 5% 1/4W	F
R724	1-216-190-00	METAL GLAZE 470 5% 1/8W	(736EE/X731/X821)
R725	1-249-417-11	CARBON 1K 5% 1/4W	F
R726	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R727	1-249-421-11	CARBON 2.2K 5% 1/4W	F (736EE/X731/X821)
R728	1-249-421-11	CARBON 2.2K 5% 1/4W	F (736EE/X821)
R729	1-249-421-11	CARBON 2.2K 5% 1/4W	F (736EE/X821)
R734	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R735	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R737	1-216-295-00	METAL CHIP 0 5% 1/10W	
R738	1-216-295-00	METAL CHIP 0 5% 1/10W	
R739	1-216-295-00	METAL CHIP 0 5% 1/10W	(836EE/K881/X831)
R748	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R749	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R750	1-216-097-00	METAL CHIP 100K 5% 1/10W	(736EE/X731/X821)
R751	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	(736EE/X731/X821)
R752	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	(736EE/X731/X821)
R753	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(736EE/X731/X821)
R754	1-216-089-00	METAL CHIP 47K 5% 1/10W	(736EE/X731/X821)
R755	1-216-089-00	METAL CHIP 47K 5% 1/10W	(736EE/X731/X821)
R756	1-216-049-00	METAL CHIP 1K 5% 1/10W	(736EE/X731/X821)
R757	1-216-043-00	METAL CHIP 560 5% 1/10W	(736EE/X731/X821)
R758	1-216-192-00	METAL CHIP 560 5% 1/8W	(736EE/X731/X821)
R759	1-216-192-00	METAL CHIP 560 5% 1/8W	(736EE/X731/X821)
R760	1-216-089-00	METAL CHIP 47K 5% 1/10W	(736EE/X731/X821)
R761	1-216-097-00	METAL CHIP 100K 5% 1/10W	(736EE/X731/X821)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R762	1-216-073-00	METAL CHIP	10K	5%	1/10W (736EE/X731/X821)
R763	1-216-089-00	METAL CHIP	47K	5%	1/10W (736EE/X731/X821)
R764	1-216-097-00	METAL CHIP	100K	5%	1/10W (736EE/X731/X821)
R765	1-216-073-00	METAL CHIP	10K	5%	1/10W (736EE/X731/X821)
R766	1-216-089-00	METAL CHIP	47K	5%	1/10W (736EE/X731/X821)
R767	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (736EE/X731/X821)
R768	1-216-222-00	METAL GLAZE	10K	5%	1/8W (736EE/X731/X821)
R769	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (736EE/X731/X821)
R770	1-216-073-00	METAL CHIP	10K	5%	1/10W
R771	1-216-049-00	METAL CHIP	1K	5%	1/10W (736EE/X731/X821)
R772	1-216-049-00	METAL CHIP	1K	5%	1/10W (736EE/X731/X821)
R774	1-216-075-00	METAL CHIP	12K	5%	1/10W
R775	1-216-073-00	METAL CHIP	10K	5%	1/10W
R776	1-216-073-00	METAL CHIP	10K	5%	1/10W
R777	1-216-295-00	METAL CHIP	0	5%	1/10W
R778	1-216-073-00	METAL CHIP	10K	5%	1/10W
R779	1-216-041-00	METAL CHIP	470	5%	1/10W (736EE/X731/X821)
R780	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (736EE/X731/X821)
R781	1-216-041-00	METAL CHIP	470	5%	1/10W (736EE/X731/X821)
R782	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (736EE/X731/X821)
R783	1-216-041-00	METAL CHIP	470	5%	1/10W (736EE/X731/X821)
R784	1-216-025-00	METAL CHIP	100	5%	1/10W (736EE/X731/X821)
R785	1-216-025-00	METAL CHIP	100	5%	1/10W (736EE/X731/X821)
R786	1-216-025-00	METAL CHIP	100	5%	1/10W (736EE/X731/X821)
R787	1-216-093-00	METAL CHIP	68K	5%	1/10W (736EE/X731/X821)
R788	1-216-079-00	METAL CHIP	18K	5%	1/10W (736EE/X731/X821)
R790	1-216-295-00	METAL CHIP	0	5%	1/10W
R791	1-216-107-00	METAL CHIP	270K	5%	1/10W (736EE/X731/X821)
R792	1-216-107-00	METAL CHIP	270K	5%	1/10W (736EE/X731/X821)
R793	1-216-107-00	METAL CHIP	270K	5%	1/10W (736EE/X731/X821)
R794	1-216-295-00	METAL CHIP	0	5%	1/10W
R796	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (736EE/X731/X821)
R797	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (736EE/X731/X821)
R798	1-249-429-11	CARBON	10K	5%	1/4W (JW778)
R801	1-214-947-00	METAL	2.7M	1%	1/2W
R810	1-249-417-11	CARBON	1K	5%	1/4W F
R811	1-260-099-11	CARBON	1K	5%	1/2W
R813	1-249-412-11	CARBON	390	5%	1/4W F

< RF MODULATOR >

⚠RF701 1-467-605-11 MODULATOR, RF (RFU-2042)

< SWITCH >

S701 1-692-900-11 SWITCH, SLIDE (1-2) (AUTO M)

< TUNER >

⚠TU701 1-693-252-11 TUNER (BTF-2G402) (736EE/X731/X821)

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* A-6727-565-A RV-34 BOARD, COMPLETE (EXCEPT X731)

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* A-6727-568-A RV-34 BOARD, COMPLETE (X731)

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(Ref. No. 1, 000Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C001	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C002	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C003	1-124-465-00	ELECT	0.47uF	20%	50V
C004	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C005	1-163-108-00	CERAMIC CHIP	43PF	5%	50V
C006	1-124-257-00	ELECT	2.2uF	20%	50V
C007	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C008	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C009	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C010	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C011	1-124-463-00	ELECT	0.1uF	20%	50V
C012	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C013	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C014	1-124-465-00	ELECT	0.47uF	20%	50V
C015	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C016	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C017	1-163-083-00	CERAMIC CHIP	1PF		50V
C018	1-126-163-11	ELECT	4.7uF	20%	50V
C019	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C020	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C024	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C025	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C026	1-126-157-11	ELECT	10uF	20%	16V
C027	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C028	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C029	1-124-465-00	ELECT	0.47uF	20%	50V
C030	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C031	1-124-638-11	ELECT	22uF	20%	10V
C032	1-126-162-11	ELECT	3.3uF	20%	50V
C033	1-124-638-11	ELECT	22uF	20%	10V
C034	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C038	1-163-087-00	CERAMIC CHIP	4PF		50V
C039	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C040	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C044	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C045	1-124-257-00	ELECT	2.2uF	20%	50V
C046	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C047	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C048	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C049	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C050	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C051	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C052	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C053	1-124-465-00	ELECT	0.47uF	20%	50V
C055	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C056	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C057	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C058	1-124-465-00	ELECT	0.47uF	20%	50V
C059	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C060	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C061	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C062	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C063	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C064	1-124-638-11	ELECT	22uF	20%	10V
C065	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C066	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C067	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V
C068	1-163-096-00	CERAMIC CHIP	13PF	5%	50V
C073	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C074	1-163-125-00	CERAMIC CHIP	220PF	5%	50V (X731)
C075	1-163-117-00	CERAMIC CHIP	100PF	5%	50V (X731)
C075	1-163-129-00	CERAMIC CHIP	330PF	5%	50V (EXCEPT X731)
C079	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C081	1-163-091-00	CERAMIC CHIP	8PF		50V
C082	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C083	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C086	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C087	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C093	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C095	1-163-033-00	CERAMIC CHIP	0.022uF		50V (X731)
C096	1-163-129-00	CERAMIC CHIP	330PF	5%	50V (X731)
C098	1-124-638-11	ELECT	22uF	20%	10V
C099	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C102	1-163-130-00	CERAMIC CHIP	360PF	5%	50V
C120	1-124-638-11	ELECT	22uF	20%	10V
C121	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C203	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C204	1-126-154-11	ELECT	47uF	20%	6.3V
C205	1-126-163-11	ELECT	4.7uF	20%	50V
C206	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C207	1-124-638-11	ELECT	22uF	20%	10V
C208	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C209	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C260	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C261	1-124-584-00	ELECT	100uF	20%	10V (EXCEPT X731)
C262	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C263	1-163-038-00	CERAMIC CHIP	0.1uF		25V (EXCEPT X731)
C264	1-124-257-00	ELECT	2.2uF	20%	50V (EXCEPT X731)
C265	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C267	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C268	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (EXCEPT X731)
C269	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (EXCEPT X731)
C270	1-163-038-00	CERAMIC CHIP	0.1uF		25V (EXCEPT X731)

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Ref. No.	Part No.	Description			Remark
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C274	1-163-038-00	CERAMIC CHIP	0.1uF		25V (EXCEPT X731)
C275	1-126-160-11	ELECT	1uF	20%	50V (EXCEPT X731)
C276	1-163-031-11	CERAMIC CHIP	0.01uF		50V (EXCEPT X731)
C278	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C701	1-124-638-11	ELECT	22uF	20%	10V (X731)
C702	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C705	1-124-638-11	ELECT	22uF	20%	10V (X731)
C801	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C802	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C803	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C804	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C805	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C806	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C807	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C808	1-124-584-00	ELECT	100uF	20%	10V
C809	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C810	1-124-584-00	ELECT	100uF	20%	10V
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C812	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C813	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C814	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C815	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C816	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C817	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C819	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C822	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C826	1-124-229-00	ELECT	33uF	20%	10V
C827	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C829	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C830	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C836	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C838	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C839	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C840	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C841	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C842	1-126-160-11	ELECT	1uF	20%	50V
C843	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C844	1-126-153-11	ELECT	22uF	20%	6.3V
C845	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C846	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C901	1-163-091-00	CERAMIC CHIP	8PF		50V (EXCEPT X731)

Ref. No.	Part No.	Description			Remark
C901	1-163-229-11	CERAMIC CHIP	12PF	5%	50V (X731)
C902	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C903	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C904	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C906	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C907	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C908	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C909	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C910	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C911	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C912	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C913	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C914	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C917	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C921	1-124-638-11	ELECT	22uF	20%	10V
C938	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
		< FILTER >			
CF201	1-527-943-00	FILTER, CERAMIC			
		< CONNECTOR >			
* CN001	1-573-829-11	CONNECTOR, BOARD TO BOARD 15P			
CN002	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P			
* CN003	1-573-837-11	CONNECTOR, BOARD TO BOARD 5P			
CN801	1-563-585-11	CONNECTOR, FLEXIBLE 8P (X731)			
CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P (EXCEPT X731)			
* CN802	1-564-029-00	PIN, CONNECTOR 4P			
CN803	1-506-482-11	PIN, CONNECTOR 3P (EXCEPT X731)			
		< DIODE >			
D801	8-719-801-78	DIODE 1SS184			
D802	8-719-801-78	DIODE 1SS184			
D803	8-719-801-78	DIODE 1SS184			
D901	8-719-951-22	IC IMN10			
		< DELAY LINE >			
DL001	1-415-668-31	DELAY LINE, ULTRASONIC			
DL002	1-415-856-11	DELAY LINE, ULTRASONIC GLASS			
DL003	1-415-728-31	DELAY LINE, 2H (ULTRASONIC)			
		< IC >			
IC001	8-759-183-95	IC HA118385FEB			
IC002	8-759-710-07	IC NJM2234M			
IC003	8-759-194-24	IC MSM7450MS-K			
IC004	8-759-035-93	IC SC7S32F			
IC201	8-759-199-28	IC BA7025F-E2			
IC260	8-759-055-49	IC AN3327K (EXCEPT X731)			

Ref. No.	Part No.	Description	Remark
IC701	8-759-075-70	IC TA75S393F-TE85L	
IC702	1-809-959-21	IC TME687 (X731)	
IC801	8-759-267-78	IC HA118191ANT	
		< JUMPER RESISTOR >	
JR022	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR024	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR030	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L001	1-408-970-21	INDUCTOR 10uH	
L002	1-408-975-21	INDUCTOR 27uH	
L003	1-408-970-21	INDUCTOR 10uH	
L004	1-408-972-21	INDUCTOR 15uH	
L005	1-408-972-21	INDUCTOR 15uH	
L006	1-408-976-21	INDUCTOR 33uH	
L007	1-408-982-11	INDUCTOR 100uH	
L008	1-408-982-11	INDUCTOR 100uH	
L009	1-408-980-21	INDUCTOR 68uH	
L010	1-408-976-21	INDUCTOR 33uH	
L011	1-408-983-21	INDUCTOR 120uH	
L012	1-408-429-00	INDUCTOR 470uH	
L013	1-408-427-00	INDUCTOR 330uH	
L014	1-408-978-21	INDUCTOR 47uH	
L015	1-408-982-11	INDUCTOR 100uH	
L017	1-408-985-21	INDUCTOR 180uH	
L018	1-408-982-11	INDUCTOR 100uH	
L019	1-408-980-21	INDUCTOR 68uH (X731)	
L202	1-408-982-11	INDUCTOR 100uH	
L260	1-408-982-11	INDUCTOR 100uH (EXCEPT X731)	
L701	1-408-982-11	INDUCTOR 100uH (X731)	
L801	1-408-948-00	INDUCTOR 220uH	
L802	1-408-948-00	INDUCTOR 220uH	
L803	1-408-982-11	INDUCTOR 100uH	
L804	1-408-982-11	INDUCTOR 100uH	
L805	1-408-985-21	INDUCTOR 180uH	
L810	1-408-985-21	INDUCTOR 180uH	
L812	1-408-982-11	INDUCTOR 100uH	
L813	1-408-970-21	INDUCTOR 10uH	
L814	1-408-970-21	INDUCTOR 10uH	
L901	1-408-974-21	INDUCTOR 22uH	
L902	1-408-948-00	INDUCTOR 220uH	
L908	1-408-982-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q001	8-729-010-25	TRANSISTOR MSD601-RT1	
Q002	8-729-010-25	TRANSISTOR MSD601-RT1	
Q003	8-729-010-25	TRANSISTOR MSD601-RT1	
Q004	8-729-010-25	TRANSISTOR MSD601-RT1	
Q005	8-729-421-19	TRANSISTOR UN2213	
Q006	8-729-010-25	TRANSISTOR MSD601-RT1	
Q007	8-729-010-05	TRANSISTOR MSB709-RT1	
Q011	8-729-010-25	TRANSISTOR MSD601-RT1	
Q012	8-729-421-19	TRANSISTOR UN2213	
Q013	8-729-010-25	TRANSISTOR MSD601-RT1	
Q014	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q016	8-729-424-56	TRANSISTOR UN211L	
Q018	8-729-424-18	TRANSISTOR UN2113	
Q021	8-729-421-19	TRANSISTOR UN2213	
Q027	8-729-421-19	TRANSISTOR UN2213	
Q028	8-729-421-19	TRANSISTOR UN2213	
Q029	8-729-421-19	TRANSISTOR UN2213	
Q030	8-729-421-19	TRANSISTOR UN2213	
Q031	8-729-424-08	TRANSISTOR UN2111	
Q032	8-729-421-19	TRANSISTOR UN2213	
Q033	8-729-421-19	TRANSISTOR UN2213 (X731)	
Q033	8-729-424-90	TRANSISTOR UN221L-TX (EXCEPT X731)	
Q034	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q035	8-729-421-19	TRANSISTOR UN2213 (X731)	
Q040	8-729-421-19	TRANSISTOR UN2213	
Q041	8-729-421-19	TRANSISTOR UN2213	
Q046	8-729-421-19	TRANSISTOR UN2213	
Q045	8-729-421-19	TRANSISTOR UN2213 (X731)	
Q047	8-729-421-19	TRANSISTOR UN2213	
Q048	8-729-421-19	TRANSISTOR UN2213	
Q049	8-729-421-19	TRANSISTOR UN2213	
Q051	8-729-421-19	TRANSISTOR UN2213	
Q055	8-729-421-19	TRANSISTOR UN2213	
Q201	8-729-010-25	TRANSISTOR MSD601-RT1	
Q810	8-729-421-19	TRANSISTOR UN2213	
Q811	8-729-921-12	TRANSISTOR 2SD1834	
Q815	8-729-421-19	TRANSISTOR UN2213	
Q816	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q817	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q818	8-729-421-19	TRANSISTOR UN2213	
Q819	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q820	8-729-010-25	TRANSISTOR MSD601-RT1	
Q821	8-729-010-25	TRANSISTOR MSD601-RT1	
Q822	8-729-421-19	TRANSISTOR UN2213	
Q840	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q841	8-729-216-21	TRANSISTOR 2SA1162Y-TE85L	
Q904	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q906	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q907	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q908	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q909	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q931	8-729-230-49	TRANSISTOR 2SC2712-YG	

RV-34

Ref. No.	Part No.	Description			Remark
Q939	8-729-424-08	TRANSISTOR	UN2111		
		< RESISTOR >			
R001	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R002	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R003	1-216-049-00	METAL CHIP	1K	5%	1/10W
R004	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R005	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R006	1-216-049-00	METAL CHIP	1K	5%	1/10W
R007	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R008	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R009	1-216-049-00	METAL CHIP	1K	5%	1/10W
R010	1-216-081-00	METAL CHIP	22K	5%	1/10W
R012	1-216-081-00	METAL CHIP	22K	5%	1/10W
R014	1-216-081-00	METAL CHIP	22K	5%	1/10W
R016	1-216-049-00	METAL CHIP	1K	5%	1/10W
R017	1-216-083-00	METAL CHIP	27K	5%	1/10W
R018	1-216-037-00	METAL CHIP	330	5%	1/10W
R019	1-216-037-00	METAL CHIP	330	5%	1/10W
R020	1-216-040-00	METAL GLAZE	430	5%	1/10W
R021	1-216-038-00	METAL CHIP	360	5%	1/10W
R022	1-216-041-00	METAL CHIP	470	5%	1/10W
R023	1-216-041-00	METAL CHIP	470	5%	1/10W
R024	1-216-035-00	METAL CHIP	270	5%	1/10W
R025	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R027	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R029	1-216-049-00	METAL CHIP	1K	5%	1/10W
R030	1-216-049-00	METAL CHIP	1K	5%	1/10W
R031	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R035	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R040	1-216-121-00	METAL CHIP	1M	5%	1/10W
R041	1-216-046-00	METAL CHIP	750	5%	1/10W
R042	1-216-043-00	METAL CHIP	560	5%	1/10W
R043	1-216-043-00	METAL CHIP	560	5%	1/10W
R044	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R045	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R046	1-216-047-00	METAL CHIP	820	5%	1/10W
R047	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R048	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R049	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R050	1-216-081-00	METAL CHIP	22K	5%	1/10W
R051	1-216-036-00	METAL CHIP	300	5%	1/10W
R052	1-216-052-00	METAL CHIP	1.3K	5%	1/10W
R053	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R055	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R056	1-216-077-00	METAL CHIP	15K	5%	1/10W
R057	1-216-049-00	METAL CHIP	1K	5%	1/10W
R058	1-216-049-00	METAL CHIP	1K	5%	1/10W
R059	1-216-037-00	METAL CHIP	330	5%	1/10W
R060	1-216-043-00	METAL CHIP	560	5%	1/10W
R061	1-216-073-00	METAL CHIP	10K	5%	1/10W
R062	1-216-081-00	METAL CHIP	22K	5%	1/10W
R065	1-216-073-00	METAL CHIP	10K	5%	1/10W
R069	1-216-047-00	METAL CHIP	820	5%	1/10W
R070	1-216-049-00	METAL CHIP	1K	5%	1/10W
R071	1-216-058-00	METAL GLAZE	2.4K	5%	1/10W
R072	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R075	1-216-081-00	METAL CHIP	22K	5%	1/10W
R077	1-216-085-00	METAL CHIP	33K	5%	1/10W
R078	1-216-081-00	METAL CHIP	22K	5%	1/10W
R079	1-216-073-00	METAL CHIP	10K	5%	1/10W
R080	1-216-049-00	METAL CHIP	1K	5%	1/10W
R081	1-216-073-00	METAL CHIP	10K	5%	1/10W(X731)
R082	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R083	1-216-083-00	METAL CHIP	27K	5%	1/10W
R084	1-216-089-00	METAL CHIP	47K	5%	1/10W
R085	1-216-045-00	METAL CHIP	680	5%	1/10W
R086	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R087	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R088	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R089	1-216-117-00	METAL CHIP	680K	5%	1/10W
R091	1-216-041-00	METAL CHIP	470	5%	1/10W(X731)
R091	1-216-295-00	METAL CHIP	0	5%	1/10W (EXCEPT X731)
R092	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R093	1-216-047-00	METAL CHIP	820	5%	1/10W
R094	1-216-073-00	METAL CHIP	10K	5%	1/10W
R099	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R102	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R111	1-216-109-00	METAL CHIP	330K	5%	1/10W
R113	1-216-295-00	METAL CHIP	0	5%	1/10W
R115	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R119	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R204	1-216-049-00	METAL CHIP	1K	5%	1/10W
R205	1-216-073-00	METAL CHIP	10K	5%	1/10W
R206	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R207	1-216-109-00	METAL CHIP	330K	5%	1/10W
R208	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R262	1-216-035-00	METAL CHIP	270	5%	1/10W (EXCEPT X731)
R263	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (EXCEPT X731)
R265	1-216-033-00	METAL CHIP	220	5%	1/10W (EXCEPT X731)
R266	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (EXCEPT X731)

Ref. No.	Part No.	Description	Remark
R267	1-216-035-00	METAL CHIP 270 5% 1/10W	(EXCEPT X731)
R268	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT X731)
R269	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R270	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R271	1-216-079-00	METAL CHIP 18K 5% 1/10W	(EXCEPT X731)
R276	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT X731)
R701	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R702	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R703	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R801	1-216-023-00	METAL CHIP 82 5% 1/10W	
R802	1-216-037-00	METAL CHIP 330 5% 1/10W	
R805	1-216-605-11	METAL CHIP 12 1% 1/10W	
R806	1-216-023-00	METAL CHIP 82 5% 1/10W	
R807	1-216-023-00	METAL CHIP 82 5% 1/10W	
R811	1-216-037-00	METAL CHIP 330 5% 1/10W	
R812	1-216-023-00	METAL CHIP 82 5% 1/10W	
R815	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R816	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R817	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R835	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R836	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R838	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R840	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R841	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R842	1-216-619-11	METAL CHIP 47 0.5% 1/10W	
R843	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R844	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R846	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R847	1-216-078-00	METAL GLAZE 16K 5% 1/10W	
R848	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R849	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R850	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R851	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R852	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R853	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R856	1-216-033-00	METAL CHIP 220 5% 1/10W	
R857	1-216-033-00	METAL CHIP 220 5% 1/10W	
R858	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R859	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R861	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R862	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R863	1-216-047-00	METAL CHIP 820 5% 1/10W	
R901	1-216-039-00	METAL CHIP 390 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R902	1-216-033-00	METAL CHIP 220 5% 1/10W	
R903	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R906	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R907	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R908	1-216-033-00	METAL CHIP 220 5% 1/10W	
R910	1-216-025-00	METAL CHIP 100 5% 1/10W	
R913	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R914	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R915	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R916	1-216-039-00	METAL CHIP 390 5% 1/10W	
R917	1-216-045-00	METAL CHIP 680 5% 1/10W	
R918	1-216-043-00	METAL CHIP 560 5% 1/10W	
R919	1-216-039-00	METAL CHIP 390 5% 1/10W	
R920	1-216-043-00	METAL CHIP 560 5% 1/10W	
R921	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R922	1-216-047-00	METAL CHIP 820 5% 1/10W	
R924	1-216-031-00	METAL CHIP 180 5% 1/10W	
R925	1-216-031-00	METAL CHIP 180 5% 1/10W	
R926	1-216-025-00	METAL CHIP 100 5% 1/10W	
R927	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R928	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R929	1-216-043-00	METAL CHIP 560 5% 1/10W	
R933	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R947	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R966	1-216-295-00	METAL CHIP 0 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV001	1-238-856-11	RES, ADJ, CERMET 10K	
RV003	1-238-856-11	RES, ADJ, CERMET 10K	
RV004	1-238-856-11	RES, ADJ, CERMET 10K	
RV005	1-238-856-11	RES, ADJ, CERMET 10K	
RV006	1-238-857-11	RES, ADJ, CERMET 22K	
RV009	1-238-854-11	RES, ADJ, CERMET 2.2K	
RV201	1-238-852-11	RES, ADJ, CERMET 470	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T001	1-403-617-11	COIL, TANK	
T201	1-409-467-11	COIL (TRAP 7.8K)	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X001	1-760-118-21	VIBRATOR, CRYSTAL (4.43MHz)	
X002	1-760-119-11	VIBRATOR, CRYSTAL (3.58MHz)	

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Ref. No.	Part No.	Description			Remark
*	A-6720-620-A	SK-44 BOARD, COMPLETE			

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(Ref. No. 1,000Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C301	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C302	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C303	1-126-153-11	ELECT	22uF	20%	6.3V
C304	1-124-465-00	ELECT	0.47uF	20%	50V
C305	1-126-160-11	ELECT	1uF	20%	50V
C306	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C307	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C308	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C309	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C310	1-126-160-11	ELECT	1uF	20%	50V
C311	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C313	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C319	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C321	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C323	1-124-584-00	ELECT	100uF	20%	10V
C324	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C327	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C328	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C331	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C332	1-124-234-00	ELECT	22uF	20%	16V

< CONNECTOR >

Ref. No.	Part No.	Description			Remark
* CN301	1-573-819-11	CONNECTOR, BOARD TO BOARD 5P			

< IC >

Ref. No.	Part No.	Description			Remark
IC301	8-759-253-37	IC	TL8828P		

< COIL >

Ref. No.	Part No.	Description			Remark
L301	1-408-982-11	INDUCTOR	100uH		
L305	1-408-982-11	INDUCTOR	100uH		
L306	1-408-974-21	INDUCTOR	22uH		
L307	1-408-978-21	INDUCTOR	47uH		

< TRANSISTOR >

Ref. No.	Part No.	Description			Remark
Q301	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
Q302	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q304	8-729-230-49	TRANSISTOR	2SC2712-YG		
Q305	8-729-216-21	TRANSISTOR	2SA1162Y-TE85L		
Q307	8-729-230-49	TRANSISTOR	2SC2712-YG		

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R301	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R302	1-216-039-00	METAL CHIP	390	5%	1/10W
R303	1-216-045-00	METAL CHIP	680	5%	1/10W
R304	1-216-079-00	METAL CHIP	18K	5%	1/10W
R305	1-216-079-00	METAL CHIP	18K	5%	1/10W
R307	1-216-017-00	METAL CHIP	47	5%	1/10W
R308	1-216-049-00	METAL CHIP	1K	5%	1/10W
R316	1-216-045-00	METAL CHIP	680	5%	1/10W
R317	1-216-039-00	METAL CHIP	390	5%	1/10W
R318	1-216-295-00	METAL CHIP	0	5%	1/10W
R319	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R321	1-216-047-00	METAL CHIP	820	5%	1/10W
R322	1-216-043-00	METAL CHIP	560	5%	1/10W
R325	1-216-049-00	METAL CHIP	1K	5%	1/10W
R326	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description			Remark
RV301	1-238-855-11	RES, ADJ, CERMET	4.7K		

< VIBRATOR >

Ref. No.	Part No.	Description			Remark
X301	1-577-381-11	VIBRATOR, CRYSTAL (14.318MHz)			

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Ref. No.	Part No.	Description			Remark
*	A-6720-623-A	TU-150 BOARD, COMPLETE (836EE/K881/X831)			

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(Ref. No. 7,000Series)

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C103	1-126-101-11	ELECT	100uF	20%	16V
C104	1-126-101-11	ELECT	100uF	20%	16V
C105	1-124-907-11	ELECT	10uF	20%	50V
C106	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C107	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C108	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C109	1-163-031-11	CERAMIC CHIP	0.01uF		50V (K881)
C110	1-126-101-11	ELECT	100uF	20%	16V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C113	1-126-101-11	ELECT	100uF	20%	16V
C115	1-126-233-11	ELECT	22uF	20%	50V
C116	1-126-101-11	ELECT	100uF	20%	16V
C120	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C121	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C122	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C123	1-130-483-00	MYLAR	0.01uF	5%	50V
C124	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-126-101-11	ELECT	100uF	20%	16V
C127	1-124-907-11	ELECT	10uF	20%	50V
C128	1-124-907-11	ELECT	10uF	20%	50V
C130	1-163-131-00	CERAMIC CHIP	390PF	5%	50V

Ref. No.	Part No.	Description			Remark
C131	1-124-907-11	ELECT	10uF	20%	50V
C132	1-124-907-11	ELECT	10uF	20%	50V
C136	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C138	1-124-907-11	ELECT	10uF	20%	50V
C139	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C140	1-124-907-11	ELECT	10uF	20%	50V
C142	1-124-907-11	ELECT	10uF	20%	50V
C143	1-124-907-11	ELECT	10uF	20%	50V
C144	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C145	1-124-907-11	ELECT	10uF	20%	50V
C146	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C147	1-124-927-11	ELECT	4.7uF	20%	100V
C150	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C151	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C152	1-124-907-11	ELECT	10uF	20%	50V
C155	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C157	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C158	1-124-907-11	ELECT	10uF	20%	50V
C159	1-126-101-11	ELECT	100uF	20%	16V
C162	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C167	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C170	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C171	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C172	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN101	1-506-480-11	PIN, CONNECTOR 15P
CN102	1-506-479-11	PIN, CONNECTOR 14P

< DIODE >

Ref. No.	Part No.	Description	
⚠D101	8-719-110-78	DIODE	RD33ES-B2
D102	8-719-800-76	DIODE	1SS226
D103	8-719-104-34	DIODE	1S2836
D103	8-719-914-44	DIODE	DAP202K
D104	8-719-104-34	DIODE	1S2836
D104	8-719-914-44	DIODE	DAP202K
D105	8-719-104-34	DIODE	1S2836
D105	8-719-914-44	DIODE	DAP202K

< FILTER >

Ref. No.	Part No.	Description
FL101	1-567-101-11	FILTER, CERAMIC
FL102	1-567-100-00	FILTER, CERAMIC
FL103	1-567-099-00	FILTER, CERAMIC

< IC >

Ref. No.	Part No.	Description	
IC101	8-759-512-95	IC	TDA8415
IC102	8-759-729-03	IC	NJM2903D
IC104	8-759-145-58	IC	uPC4558C

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W(K881)

< COIL >

Ref. No.	Part No.	Description
L102	1-408-421-00	INDUCTOR 100uH
L103	1-408-409-00	INDUCTOR 10uH
L104	1-408-409-00	INDUCTOR 10uH
L105	1-408-409-00	INDUCTOR 10uH
L106	1-408-409-00	INDUCTOR 10uH
L107	1-408-421-00	INDUCTOR 100uH
L108	1-408-409-00	INDUCTOR 10uH
L109	1-408-409-00	INDUCTOR 10uH

< DECODER BLOCK >

Ref. No.	Part No.	Description
⚠NCM101	1-467-604-11	DECODER BLOCK, MPX (NCA-389B)

< TRANSISTOR >

Ref. No.	Part No.	Description	
⚠Q104	8-729-173-38	TRANSISTOR	2SA733-K
Q105	8-729-422-27	TRANSISTOR	2SD601A-Q
Q106	8-729-422-27	TRANSISTOR	2SD601A-Q
Q107	8-729-422-27	TRANSISTOR	2SD601A-Q
Q108	8-729-422-27	TRANSISTOR	2SD601A-Q
Q109	8-729-422-27	TRANSISTOR	2SD601A-Q
Q110	8-729-422-27	TRANSISTOR	2SD601A-Q
Q111	8-729-422-27	TRANSISTOR	2SD601A-Q

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R103	1-216-295-00	METAL CHIP	0	5%	1/10W
R104	1-216-093-00	METAL CHIP	68K	5%	1/10W
R105	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-025-00	METAL CHIP	100	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-089-00	METAL CHIP	47K	5%	1/10W
R109	1-216-049-00	METAL CHIP	1K	5%	1/10W
R110	1-216-041-00	METAL CHIP	470	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W(K881)
R112	1-216-295-00	METAL CHIP	0	5%	1/10W
R114	1-216-043-00	METAL CHIP	560	5%	1/10W
R115	1-216-025-00	METAL CHIP	100	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-041-00	METAL CHIP	470	5%	1/10W
R118	1-216-295-00	METAL CHIP	0	5%	1/10W
R119	1-216-295-00	METAL CHIP	0	5%	1/10W
R120	1-216-089-00	METAL CHIP	47K	5%	1/10W
R121	1-216-097-00	METAL CHIP	100K	5%	1/10W
R122	1-216-097-00	METAL CHIP	100K	5%	1/10W
R123	1-216-097-00	METAL CHIP	100K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
R124	1-216-246-91	METAL GLAZE	100K	5%	1/8W	
R125	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R127	1-216-043-00	METAL CHIP	560	5%	1/10W	
R128	1-247-807-31	CARBON	100	5%	1/4W	
R129	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R130	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R131	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R132	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R133	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R134	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R135	1-216-041-00	METAL CHIP	470	5%	1/10W	
R136	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R137	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R143	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R144	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R147	1-216-295-00	METAL CHIP	0	5%	1/10W	
R148	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R156	1-216-296-91	METAL GLAZE	0	5%	1/8W	
R159	1-216-041-00	METAL CHIP	470	5%	1/10W	
R160	1-216-041-00	METAL CHIP	470	5%	1/10W	
R163	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R170	1-216-025-00	METAL CHIP	100	5%	1/10W	
R172	1-216-033-00	METAL CHIP	220	5%	1/10W	
R173	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R174	1-216-025-00	METAL CHIP	100	5%	1/10W	
R176	1-216-295-00	METAL CHIP	0	5%	1/10W	
R177	1-249-417-11	CARBON	1K	5%	1/4W	F
R178	1-216-043-00	METAL CHIP	560	5%	1/10W	
R179	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R180	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R181	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R182	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R183	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R184	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R185	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R190	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R191	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R192	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R193	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R194	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R195	1-216-295-00	METAL CHIP	0	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV101	1-241-763-11	RES, ADJ, CARBON 4.7K	

< TUNER >

Ref. No.	Part No.	Description	Remark
⚠TU101	1-693-246-11	TUNER (BTF-3G504)	

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X101	1-567-925-11	VIBRATOR, CRYSTAL	

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* A-6720-621-A VR-43 BOARD, COMPLETE (K881)

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(Ref. No. 8,000Series)

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN701	1-563-585-11	CONNECTOR, FLEXIBLE 8P	
CN702	1-506-476-11	PIN, CONNECTOR 11P	
CN702	1-568-788-21	PIN, CONNECTOR 11P	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description				Remark
JR701	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR703	1-216-296-91	METAL GLAZE	0	5%	1/8W	
JR704	1-216-296-91	METAL GLAZE	0	5%	1/8W	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R701	1-216-295-00	METAL CHIP	0	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV701	1-223-611-11	RES, VAR, CARBON 10K (MIC VOL 1)	
RV702	1-223-611-11	RES, VAR, CARBON 10K (MIC VOL 2)	
RV703	1-223-611-11	RES, VAR, CARBON 10K (ECHO)	

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MISCELLANEOUS

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Ref. No.	Part No.	Description	Remark
1	1-467-611-11	SWITCH BLOCK, CONTROL (K881)	
1	1-467-611-21	SWITCH BLOCK, CONTROL (X831)	
1	1-467-611-31	SWITCH BLOCK, CONTROL (736EE)	
1	1-467-611-41	SWITCH BLOCK, CONTROL (X821)	
1	1-467-611-51	SWITCH BLOCK, CONTROL (X731)	
1	1-467-611-61	SWITCH BLOCK, CONTROL (836EE)	
65	1-558-924-21	CABLE, PIN (736EE/X821/X731)	1)
65	1-558-924-41	CABLE, PIN (836EE/K881/X831)	
260	1-543-647-11	HEAD, FE	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
M901	8-848-618-11	DRUM ASSY DZH-54A (X731)	
M901	8-848-624-11	DRUM ASSY DZH-68A (EXCEPT X731)	
M902	8-835-489-01	MOTOR, DC U-26K (CAPSTAN)	81)
M904	X-3727-784-1	MOTOR ASSY (LOADING)	
S1	1-571-920-11	SWITCH, ROTARY (CAM ENCODER)	

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The components identified by
mark ⚠ or dotted line with mark.
⚠ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS ******************************	
	1-542-221-21	MICROPHNE (F-VJ3321)(K881)	
⚠	1-569-008-11	ADAPTER, CONVERSION 2P (K881/X731/X821/X31)	
	1-575-334-11	CORD, CONNECTION (AV CABLE 1.5m) (EXCEPT X731)	
⚠	1-696-562-11	CORD, POWER	
	1-696-593-11	CORD, CONNECTION (PAL)(AERIAL)	
	3-758-258-11	MANUAL, INSTRUCTION (ENGLISH, JAPANESE) (K881)	
	3-758-258-41	MANUAL, INSTRUCTION (ARABIC CHINESE)(K881)	
	3-758-258-51	MANUAL, INSTRUCTION (ENGLISH, JAPANESE) (X731/X821/X831)	
	3-758-258-61	MANUAL, INSTRUCTION (ARABIC, CHINESE, RUSSIAN)(X731/X821/X831)	
	3-758-258-71	MANUAL, INSTRUCTION (ENGLISH, CZECK) (736EE/836EE)	
	3-758-258-81	MANUAL, INSTRUCTION (POLISH, RUSSIAN) (736EE/836EE)	
*	3-957-935-01	CUSHION (LOWER)	
*	3-957-955-01	CUSHION (UPPER)	
*	3-958-899-01	INDIVIDUAL CARTON (836EE)	
*	3-958-899-11	INDIVIDUAL CARTON (736EE)	
*	X-3943-977-1	INDIVIDUAL CARTON ASSY (K881)	
*	X-3943-978-1	INDIVIDUAL CARTON ASSY (X731:E)	
*	X-3944-000-1	INDIVIDUAL CARTON ASSY (X831:E)	
*	X-3944-001-1	INDIVIDUAL CARTON ASSY (X821:E)	
*	X-3944-166-1	INDIVIDUAL CARTON ASSY (X731:Saudi Arabia)	
*	X-3944-167-1	INDIVIDUAL CARTON ASSY (X831:Saudi Arabia)	
*	X-3944-280-1	INDIVIDUAL CARTON ASSY (X821:Saudi Arabia)	

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****
HARDWARE LIST
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Ref. No.	Part No.	Description	Remark
#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#2	7-621-255-25	SCREW +PTT 2X4 (S)	
#4	7-682-645-01	SCREW +PS 3X4	
#5	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#6	7-682-548-04	SCREW +P 3X8	
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#10	7-628-254-05	SCREW +PS 2.6X5	
#11	7-624-102-04	STOP RING 1.5, TYPE E	
#13	7-682-546-04	SCREW +P 3X5	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
INTERFACE, IC PIN FUNCTION DESCRIPTION

6-1. SYSTEM CONTROL – VIDEO BLOCK INTERFACE

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC• PAUSE
$\overline{\mathrm{V•PB}}$	MA-202 IC203 (95)	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	MA-202 IC203 (85)	O	L	L	L	L	HI-Z (2.5 V)	*1	*10	H	H	L	L
RF SW P (SW30)	MA-202 IC203 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	MA-202 IC203 ②	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
$\overline{\mathrm{SP}}$	MA-202 IC203 (91)	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
EP	MA-202 IC203 (92)	O	*11	*11	*11	*7	*7	*7	*7	*7	*7	*11	*11
LP	MA-202 IC203 (93)	O	*12	*12	*12	*7	*7	*7	*7	*7	*7	*12	*12
REC•P	MA-202 IC203 ⑤	O	L	L	L	L	L	L	L	L	L	L	H
REC	MA-202 IC203 (98)	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	MA-202 IC203 (66)	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
OSD MUTE	MA-202 IC203 (71)	O	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9
CTL REC	MA-202 IC203 (94)	O	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15
E TAPE	MA-202 IC203 ㉘	O	H	H	H	*13	*13	*13	*13	*13	*13	L	L
$\overline{\mathrm{NTSC}}$	MA-202 IC203 ㉗	O	H	H	H	H	H	H	H	H	H	H	H
3.58$\overline{\mathrm{NTSC}}$	MA-202 IC203 ㉖	O	H	H	H	H	H	H	H	H	H	H	H
JOG	MA-202 IC203 (97)	O	L	L	L	L	H	H	H	H	H	L	L
ORC SETTEI	MA-202 IC203 (76)	O	L	L	L	L	L	L	L	L	L	*14	*14

*1. Foward slow mode: "HI-Z (2.5 V)" in tape stop, "L" in tape running (approx. 40 msec.).
Foward slow mode: "HI-Z (2.5 V)" in tape stop, "H" in tape running SP mode (approx. 40 msec.).
"L" in tape running EP mode (approx. 40 msec.).
*2. Synchronized with drum rotation. 25 Hz or 30Hz 50% duty pulse.
*3. Normally "L". "H" when CTL signal is not generated.
*4. V period "H" pulse.
*5. "H" in SP mode. "L" in LP/EP mode.
*6. Selected by REC mode. SP mode: "L".
*7. Selected by tape recording mode.

Model / Signal	SP	LP	EP
$\overline{\mathrm{SP}}$ (91)	L	H	H
EP (92)	L	L	H
LP (93)	L	H	L

*8. Composite Sync signal (positive).
*9. "H" when menu screen or blue back screen.
*10. "HI-Z (2.5 V)" in LP/EP mode. "H" in SP mode.
*11. Selected by REC mode: "H" EP mode.
*12. Selected by REC mode: "H" LP mode.
*13. "L" when APC is off. "H" when APC is ON and "HG tape" is used.
*14. "H" during APC measurement.
*15. Selected by "PICTURE CONTROL" switch. "H" EDIT position.

6-2. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTHREAD-ING	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC• PAUSE	PB INDEX WRT/ERS
REC CTL	MA-202 IC203 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
$\overline{\text{CAP STOP}}$	MA-202 IC203 ㊳	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	
STEP PLS	MA-202 IC203 ㉔	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTL REC	MA-202 IC203 ㉘	O	L	L	L	L	L	L	L	L	L	L	L	H	H	H
INDEX	MA-202 IC203 ㉚	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	MA-202 IC203 (67)	I	H/L	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H/L	
VD CTL	MA-202 IC203 (77)	I	H/L	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H/L	
DRUM PG	MA-202 IC203 (68)	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
DRUM FG	MA-202 IC203 (69)	I	H/L	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	
CAP FG	MA-202 IC203 (70)	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	
CAP DA	MA-202 IC203 (73)	O	*10	*10	*10	*10	*10	*11	*10	*10	*11	*11	*11	*11	*10	
DRUM DA	MA-202 IC203 (74)	O	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	
CTL STEP	MA-202 IC203 ㉙	O	L	L	L	L	L	L	L	*13	L	L	L	L	L	

*1. 30 Hz or 25 Hz pulse.
*2. Pulse at tape running.
*3. Reverse logic pulse of STEP PLS.
*4. "L" when drum rotation stop.
*5. Unstable period pulse.
*6. Pulse of period in proportion to tape speed.
*7. 30 Hz or 25 Hz pulse.
*8. 360 Hz or 300 Hz or 180/150 Hz pulse.
*9. Pulse at tape running.
*10. Approx. 2 msec period "H" or "L" pulse.
*11. Approx. 1.5 msec period "H" or "L" pulse.
*12. Approx. 3 msec period "H" or "L" pulse.
*13. "H" when FWD direction STEP drive.

6-3. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

Signal	Pin No.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC• PAUSE
CAM *1	MA-202 IC203 ⑫	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	MA-202 IC203 ⑭	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	MA-202 IC203 ⑬	O			H	L	H	L											
MODE 1	MA-202 IC203 (58)	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	MA-202 IC203 (57)	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA-202 IC203 (56)	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	MA-202 IC203 (55)	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	MA-202 IC203 ⑮	I	*2	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	MA-202 IC203 ⑯	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
TREEL FG	MA-202 IC203 (64)	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
SREEL FG	MA-202 IC203 (63)	I	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
END LED	MA-202 IC203 ㉜	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	MA-202 IC203 ㉞	O (O.D)	*1							*1	*1			*6		*1	*1		
CAP TRQ 2	MA-202 IC203 ㉝	O (O.D)								*1	*1								
CAP RVS	MA-202 IC203 (72)	O	H	H			L	H	H/L	L	H	L	L	L/*5	L	L	H	L	L
T SENS	MA-202 IC203 ⑰	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-202 IC203 ⑱	I	*7	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "L" when mechanism mode transition.
*2. "L" when erasing protection tab is bent, "H" when not bent.
*3. Pause of period in proportion to reel rotating speed.
*4. Approx. 2 msec period "H" pulse.
*5. Pulse at tape running.
*6. "L" when tape running and CAP RVS is "H".
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.

6-4. SYSTEM CONTROL – SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE

Signal	Pin No.	I/O	I/O level
$\overline{\text{COSMO·RESET}}$	MA-202 IC203 ㊵	I	Normally "H". "L" when service interruption is detected or restored.
$\overline{\text{COSMO·CS}}$	MA-202 IC203 ㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
SI•BUS	MA-202 IC203 ㊺	I	Serial communication data from timer microprocessor. V period "L" pulse.
SO•BUS	MA-202 IC203 ㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA-202 IC203 ㊼	I	Serial communication clock with timer microprocessor. V period "L" pulse.

6-5. SYSTEM CONTROL – AUDIO BLOCK INTERFACE

Signal	Pin No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB• PAUSE	SLOW	×2	CUE	REVIEW	REC	REC• PAUSE
AF ENVELOP	MA-202 IC203 (61)	I	AF RF envelope signal input terminal for automatic tracking.										
NA PB	MA-202 IC203 ⑪	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA-202 IC203 ㊲	O (O.D)	L	L	L	*1	H	H	H	H	H	L	L
$\overline{\text{SP}}$	MA-202 IC203 (91)	O	*2	*2	*2	*3	*3	*3	*3	*3	*3	*2	*2
NA REC•$\overline{\text{P}}$	MA-202 IC203 ⑩	O	L	L	L	L	L	L	L	L	L	H	L
AF REC•$\overline{\text{P}}$	MA-202 IC203 ④	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA-202 IC203 (100)	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF SW POSITION	MA-202 IC203 (51)	I	Input terminal for AF switching position adjustment.										
FULL $\overline{\text{ERS}}$	MA-202 IC203 ㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. 30 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.
*2. Selected by REC mode selector. SP mode: "L".
*3. Selected by tape recording mode. SP mode: "L".

6-6. SYSTEM CONTROL AND RF MODULATOR – INPUT SELECTION BLOCK INTERFACE

Signal	Pin No.	I/O	I/O level
LINE 1	MA-202	O	*1. Input select control signal.
LINE 2	MA-202 IC203 (82)	O	

*1.

Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1 (79)	L	H	L
LINE 2 (82)	L	L	H

6-7. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION
(MA-202 BOARD IC203 CXP80732-014Q) (HiFi), CXP80732-012Q (MONO)

Pin No.	Pin Name	I/O	Function
1	RF SWP	O	Video switching pulse output
2	Q VD	O	Quasi VD pulse output
3	Q HD ENBL	O	Quasi HD voltage level control
4	AF REC $\overline{P}$	O	"H" output when hi-fi audio REC
5	RECP	O	"H" output when video REC•PAUSE
6	FE ON	O	Flaying erase ON/OFF
7	REC CTL	O	REC CTL output
8	INT VD	O	Internal VD signal. Not used
9	SKEW ON	O	"H" dering NTSC PB JOG
10	$\overline{\text{CHOI MODO SI}}$	O	"L" when "rewind a lottle" Command is in
11	NA PB	O	"H" when normal audio playback
12	CAM	O	CAM motor select
13	CW	O	Clockwise/counterclockwise signal output
14	LOAD	O	Loading motor select
15	CIN/REC PRF	I	Erasing protection tab, cassette IN detection input
16	C DOWN	I	Cassette up/down detection input
17	T SENS	I	Take up end sensor input
18	S SENS	I	Supply end sensor input
19	MOD CONT	O	RF modulator ON/OFF control
20	AV CONT	O	Not used
21	MESECAM	I/O	ME SECAM : "H" out, Force NTPB : "L" out, Force SECAM PB: "L" out
22	SECAM	I/O	SECAM : H in
23	VIDE MUTE	O	Not used
24	STEP PLS	O	"H" when capstan step drive
25	3.58/4.43 NTSC	O	"L"
26	$\overline{\text{3.58 NTSC}}$	O	"H"
27	$\overline{\text{NTSC}}$	O	"H"
28	E-TAPE	O	"H" when HG tape using
29		O	Not used
30		O	Not used
31		O	Not used
32	END LED	O	END sensor LED drive output
33	CAP TPQ2	O	Capstan current control. "L" when FF/REW ➡ stop
34	CAP TPQ1	O	Capstan current control. "L" when slow down
35	PAL	O	"H"
36	$\overline{\text{FULL ERS}}$	O	"L" when full erase head operation
37	A MUTE	O	Audio MUTE output
38	$\overline{\text{CAP STOP}}$	O	Capstan STOP signal output
39	MP	I	Fixed at "L" level
40	$\overline{\text{COSMO RST}}$	I	System reset input
41			GND
42	XTAL		System clock 12 MHz
43	EXTAL		
44	$\overline{\text{COSMO CS}}$	I	Chip select signal
45	SI0	I	Signal for serial communication
46	SO0	O	
47	SCLK	I	
48	L METER	I	Not used
49	R METER	I	Not used

Pin No.	Pin Name	I/O	Function
50	NT PB SW	I	3.58/4.43/ON PAL TV input
51	AF SW POSI	I	VR input for hi-fi switching pulse position adjustment
52	AVss		GND
53	AVREF		AD port reference input. UNSW 5 V
54	AVDD		UNSW 5 V
55	MODE4	I	Mechanism section CAM encoder input
56	MODE3	I	
57	MODE2	I	
58	MODE1	I	
59	DEW	I	DEW sensor input. Not used
60	RF ENV	I	Video RF envelope input
61	AF ENV	I	hi-fi audio RF envelope input
62	RF SW POSI	I	VR input for RF switching position adjustment
63	SREEL FG	I	S reel sensor input
64	TREEL FG	I	T reel sensor input
65	NT JUDGE	I	Not used
66	V SYNC	I	Composite sync input
67	PB CTL	I	Playback CTL input
68	DRM PG	I	Drum PG input
69	DRM FG	I	Drum FG input
70	CAP FG	I	Capstan FG input
71	OSD MUTE	O	V MUTE is out to OSD IC
72		O	Not used
73	CAP D/A	O	Capstan error D/A output
74	DRM D/A	O	Drum error D/A output
75	$\overline{\text{EP}}$	O	"L" when EP mode REC
76	ORC SETTEI	O	"H" when ORC measurement
77	VD CTL	I	Playback CTL input
78	AMS IN	I	KARAOKE AMS input. No sound position detacting signal is in
79	LINE1	O	Video/audio input select signal
80	1	O	Expansion port for serial communication
81	SCK1	O	
82	LINE2	O	Video/audio input select signal
83	$\overline{\text{NA REC P}}$	I/O	"H" when recording normal audio
84	CAP RVS	O	Capstan reverse signal output
85	HEAD CONT	I/O	Head select control
86		I	Not used
87		O	Not used
88			GND
89			UNSW 5 V
90			Connected to UNSW 5 V
91	$\overline{\text{SP}}$	O	"L" when SP mode
92	ENV GAIN	O	RF envelope gain control
93	CTL STEP	O	CTL amp step control
94	CTL REC	O	CTL amp recording inhibition
95	$\overline{\text{V PB}}$	O	"L" when video playback
96	CTL INDEX	O	CTL amp index control
97	JOG	O	"H" when trick play mode
98	REC	O	Rise up signal of head amp recording power
99	LP HEAD	O	(PAL) Head select control
100	AF SWP	O	hi-fi switching pulse output

6-8. TIMER, TUNER, MODE CONTROL MICROPROCESSOR PIN FUNCTION
(MF-246 BOARD IC101 MB89096-126)

Pin No.	Pin Name	I/O	Function
1	CL1		Connected to sub oscillator for clock
2	CL0		Connected to sub oscillator for clock
3	MOD0		Ground
4	MOD1		Ground
5	X0		Connected to main oscillator
6	X1		Connected to main oscillator
7	Vss		Ground
8	$\overline{\text{RESET}}$	I	Reset signal in
9	STEREO DET	I	Not used
10	V DET	I	Not used
11	PAL/NTSC	O	CG control signal output
12	F MONO	O	Not used
13	$\overline{\text{H DET}}$	I	H det signal in
14	TU CONT 0	O	Tuner control 0
15	$\overline{\text{COSMO RESET}}$	O	System controller reset signal
16	$\overline{\text{CG CS}}$	O	Character generator chip select signal
17	$\overline{\text{POWER FAIL}}$	I	Power failure detect signal in
18	$\overline{\text{V SYNC}}$	I	V sync. signal in
19	POWER CONT	O	Power ON/OFF control signal
20	$\overline{\text{COSMO CS}}$	O	System controller chip select signal
21	TA MUTE	O	Tuner audio signal muting signal is out
22	FF LED	O	FF LED signal
23	SCL	I/O	I²C bus clock
24	SDA	I/O	I²C bus data
25	$\overline{\text{REW LED}}$	O	REW LED
26	$\overline{\text{H.S REO LED}}$	O	HI-SPEED REW LED
27	$\overline{\text{PAUSE LED}}$	O	PAUSE RED
28	CMOD		Ground
29	PLL CLK	O	Tuner clock signal
30	PLL DATA	O	Tuner data signal
31	PLL ENABLE	O	Tuner enable signal
32	SIRCS IN	I	SIRCS signal in
33	FWD LED	I	FWD LED
34	RVS LED	I	RVS LED
35	TUN SYSTEM 0	O	Tuner system signal out 0
36	TUN SYSTEM 1	O	Tuner system signal out 1
37	TUN CONT 1	O	Tuner control 1
38	TUN CONT 2	O	Tuner control 2
39 – 48	SEG 0 – 9		VFP segment 0 – 9
[illegible]	Vcc		Power supply
54 – 52	SEG 10 – 12		VFP segment 10 – 12
53	Vfpd		Pull-down power supply
54 – 57	SEG 13 – 16		VFP segment 13 – 16
58	Vss		Ground

Pin No.	Pin Name	I/O	Function
59 – 61	SEG 17 – 19		VFP segment 17 – 19
62 – 66	GRID 7 – 11	O	VFP grid 7 – 11
67	Vcc	O	Power supply
68 – 74	GRID 0 – 6	I	VFP grid 0 – 6
75	$\overline{\text{KARAOKE CS}}$	O	Karaoke microcomputer chip select signal
76	KA MUTE	O	Karaoke audio signal muting
77	SI BUS	I	Serial data input
78	SO BUS	O	Serial data output
79	S CLK	O	Clock for serial communication
80	MEM CS	O	E² PROM chip select signal
81	MEM CLK	O	E² PROM clock
82	MEM DATA	O	E² PROM data
83	AVss		Ground for analog circuit
84	AFT	I	Tuner AFT input
85 – 91	A/D 1 – 7	I	Key reading A/D input
92	AVcc		Power supply for analog circuit
93	FWD	O	Key reading A/D input
94	DEST 1	I	Destination discriminating A/D input
95	DEST 2	I	Destination discriminating A/D input
96	KARAOKE ECHO	O	Echo level A/D input
97	REC LED		REC LED
98	TIMER	O	TIMER LED
99	BUZZER	O	Buzzer out
100	Vcc		Power supply

- TunCtl 0 (pin 14)/TunCtl 1 (pin 37)/TunCtl 2 (pin 38)

TUNER MONO SLV-736EE/X731/X821

	I	DK	BG	M
⑭ TunCtl 0	1	0	0	0
㊲ TunCtl 2	1	1	0	0
㊳ TunCtl 3	0	0	0	1

TUNER STEREO SLV-836EE/K881/X831

	I	DK	BG	M
⑭ TunCtl 0	0	1	1	0
㊲ TunCtl 2	0	0	1	1
㊳ TunCtl 3	0	0	0	1

- CG CONTROL SIGNAL OUTPUT
  H : PAL
  L : NTSC

				OUT (PAL/NTSC)
Hdet	NT/PAL_: NT	EE SYSTEM	NTSC358/443_: NTSC358	NTSC
			NTSC358/443_: NTSC443	PAL
		PB SYSTEM	NTPB SEL: NTSC358	NTSC
			NTPB SEL: NTSC443	PAL
			NTPB SEL: ON PAL	PAL
	NT/PAL_: PAL			PAL
No Hdet	NTPB SEL: NTSC358			NTSC
	NTPB SEL: NTSC443			PAL
	NTPB SEL: ON PAL			PAL

- TUNER SYSTEM SIGNAL OUTPUT

	BG	I	DK
㉟ Tun System 0	1	0	0
㊱ Tun System 1	0	1	0

* M select is controlled by the servo/system control microprocessor.

6-9. DIGITAL SOUND PROCESSOR CONTROL MICROPROCESSOR (SLV-K881)
(KR-24 BOARD IC201 CXP50112-441Q)

Pin No.	Pin Name	I/O	Function
1 – 28	N. C.	O	Connected to ground
29	$\overline{\text{KARAOKE}}$ $\overline{\text{CS}}$	I	Chip select signal input
30	N. C.		Not used
31	TEX	I	Conected to V_{DD}
32	$\overline{\text{RST}}$	I	Rest signal input
33	N. C.		Not used
34	V_{DD}		Power supply
35 – 42	N. C.	O	Connected to ground (Pin ㊴ via resistor)
43	$\overline{\text{EC}}$	I	Connected to V_{DD}
44	$\overline{\text{COM SC}}$	I	Clock for serial communication input
45	COM SO	O	Serial data output
46	COM SI	I	Serial data input
47	$\overline{\text{SIAK}}$	I	D.S.P. serial input executing signal input
48	DSP SO	O	D.S.P. serial data output
49	DSP SCK	O	D.S.P. serial clock output
50	$\overline{\text{SRDY}}$	O	Ready signal that informs D.S.P. serial data input is over input
51	$\overline{\text{SIRQ}}$	O	D.S.P. serial input request signal output
52	N. C.	O	Connected to ground
53	$\overline{\text{KARA}}$/NORM	O	"L" when KARAOKE mode
54	$\overline{\text{REST}}$	O	D.S.P. reset signal output
55	ASSISTNT VO	O	"H" when Assistant vocal mode
56	KARA/$\overline{\text{NORM}}$	O	"H" when KARAOKE mode
57	$\overline{\text{CHOI MODOSHI}}$	O	"L" during rewinding a little (doing CHOI-MODOSHI)
58	KEY VO/SO	O	KEY/VOICE output. Not used
59, 60	N. C.	O	Not used
61	WP	I	Connected to V_{DD}
62	RMC	I	Connected to V_{DD}
63 – 70	N. C.	O	Connected to ground
71	V_{SS}		Ground
72	XTAL		Connected oscillator
73	N. C.		Not used
74	EXTAL	I	Connected to oscillator
75	V_{DD}		Power supply
76 – 80	N. C.	O	Conncted to ground

SECTION 7
ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for adjustments on Page 7-8.

7-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT Ⅱ.

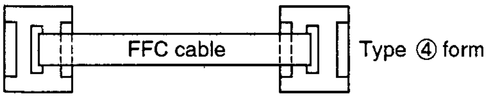
7-2. ELECTRICAL ADJUSTMENTS

2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

2-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 30 MHz, delay mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL SECAM, and NTSC pattern generators
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Alignment tape
   Part Code: H7099052H (MH-2)
10) Extension cables (See page 7-2 for using location)


FFC cable
Type ④ form

① HF-34 (CN101) ↔ MA-202 (CN406)
(11 pins J-6090-047-A)
② HF-34 (CN102) ↔ MA-202 (CN405)
(11 pins J-6090-047-A)
③ RV-34 (CN001) ↔ MA-202 (CN303)
(15 pins J-6090-050-A)
④ RV-34 (CN002) ↔ MA-202 (CN304)
(20 pins J-6090-043-A)

2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

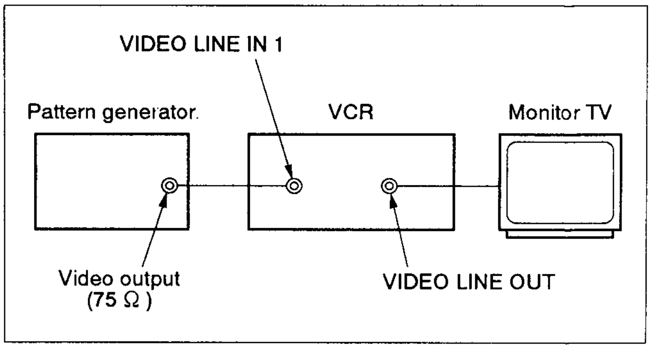

VIDEO LINE IN 1
Pattern generator
VCR
Monitor TV
Video output
(75 Ω)
VIDEO LINE OUT

Fig. 7-2-1.

2-1-3. Set-up Adjustment

In this adjustment, PAL pattern generator is connected with LINE 1 input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst sigal and "red" signal are 0.30 : 0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the video section.

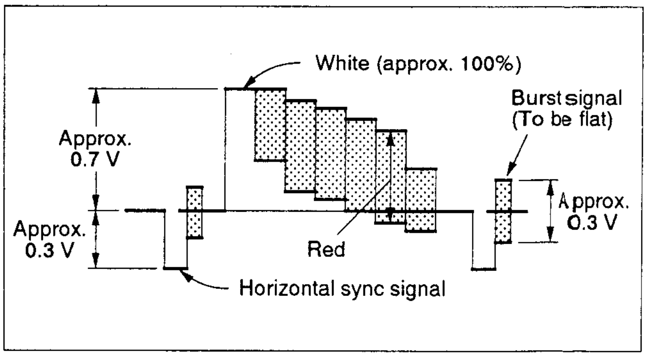

White (approx. 100%)
Burst signal
(To be flat)
Approx.
0.7 V
Approx.
0.3 V
Approx.
0.3 V
Red
Horizontal sync signal

Fig. 7-2-2.

2-1-4. Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 minutes	Stair-step	6 kHz
2	5 minutes	—	3 kHz
3	10 minutes	Color bar	1 kHz
4	3 minutes	RF sweep	—

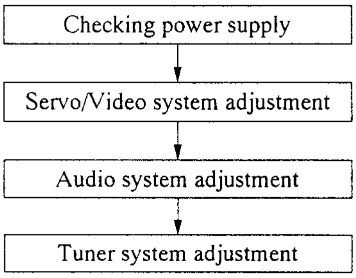
2-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	LINE IN : phono jacks 1 Vp-p, 75 Ω , unbalanced, sync negative
Audio inputs	LINE IN : phono jacks 47 kΩ , − 7.5 dBs (0 dBs = 0.775 Vrms) More than 10 kΩ , − 4 dBs
Video outputs	LINE OUT : phono jack 1 Vp-p, 75 Ω , unbalanced, sync negative
Audio outputs	LINE OUT : phono jack − 7.5 dBs at load impedance 47 kΩ Output impedance : less than 10 kΩ

2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.


Checking power supply
Servo/Video system adjustment
Audio system adjustment
Tuner system adjustment

2-2. POWER SUPPLY CHECK (PT-97 BOARD)

Mode	E-E
Measuring Instrument	Digital voltmater
D6 V check	
Measurement Point	Pin ① of CN701
Specified Value	5.9 ± 0.2 Vdc
MTR 12 V check	
Measurement Point	Pin ⑮ of CN701
Specified Value	12.4 ± 0.5 Vdc
SW 9 V check	
Measurement Point	Pin ⑲ of CN701
Specified Value	9.0 ± 0.3 Vdc
AN 12 V check	
Measurement Point	Pin ⑧ of CN702
Specified Value	12.0 ± 0.3 Vdc
UNSW − 13 V check	
Measurement Point	Pin ⑨ of CN702
Specified Value	− 13.0 ± 0.8 Vdc
UNSW 5.0 V check	
Measurement Point	Pin ⑪ of CN702
Specified Value	5.3 ± 0.2 Vdc
+35 V check	
Measurement Point	Pin ⑤ of CN705
Specified Value	35.0 ± 3.0 Vdc

Checking Method:

1) Confirm that each voltage meets its specified value.

2-3. SERVO/VIDEO SYSTEM ADJUSTMENTS

- **NOTE ON REPAIRING RV-34 BOARD**
  [Servicing Jig]
  MA-202 ↔ RV-34 Extension cable.
  ⓐ 15 pins (J-6090-050-A) CN303 ↔ CN001
  ⓑ 20 pins (J-6090-043-A) CN304 ↔ CN002

① There are two types of the connectors between MA-202 and RV-34 boards according to the manufacturing companies (TAIKO or MOLEX). They are not interchangeable.

② Servicing jigs are for common use. When using it, please be sure to confirm the form of connectors.

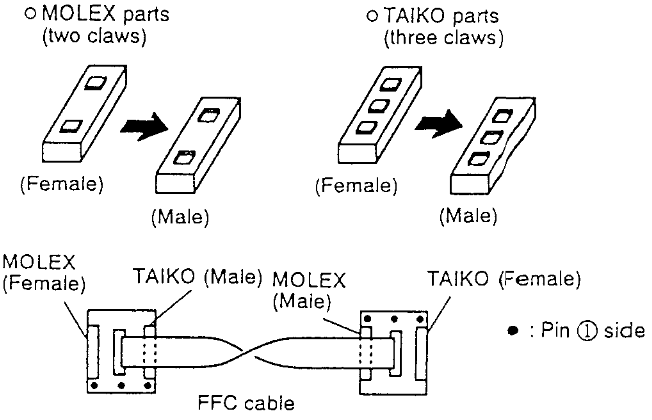

○ MOLEX parts (two claws)
○ TAIKO parts (three claws)
(Female)
(Male)
(Female)
(Male)
MOLEX (Female)
TAIKO (Male)
MOLEX (Male)
TAIKO (Female)
● : Pin ① side
FFC cable

Fig.7-2-3

- EXTENSION CABLE USING LOCATION
  (See page 7-1 for details of extension cables.)

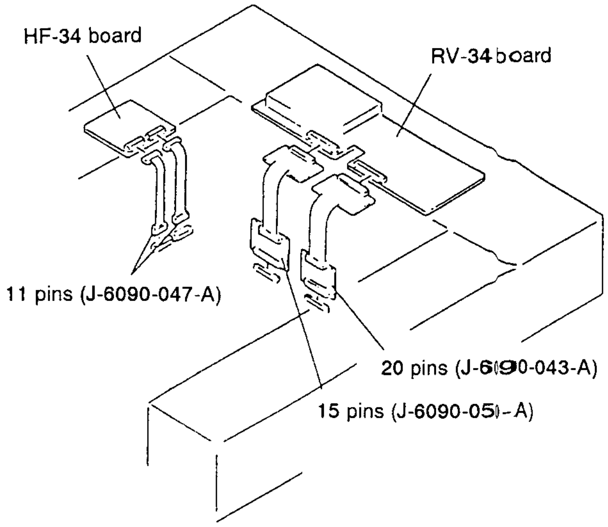

HF-34 board
RV-34 board
11 pins (J-6090-047-A)
20 pins (J-6090-043-A)
15 pins (J-6090-050-A)

Fig.7-2-4

2-3-1. Switching Position Adjustment (MA-202 Board)

Purpose:

Adjust the interval between A ch and B ch of tape playback output.

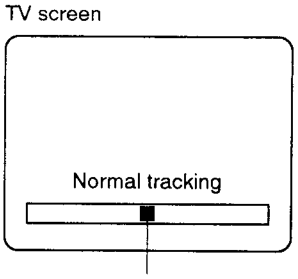
Improve the interchangeability with other tapes and sets.

When it is out of order, the interval appears on the screen, the screen is disturbed.

Mode	PB
Signal	Alignment tape
Measurement Point	CH1: CJ601 VIDEO LINE OUT (IO-51 board) CH2: Pin ⑳ of CN304 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202
Specified Value	6.5 ± 0.5 H (416 ± 32 μsec)

Adjusting Method:

1) Adjust the tracking position to the center by pushing tracking buttons ▲, ▼ (on remote commander).
2) Check that switching position is 6.5 ± 0.5 H. (416 ± 32 μsec)
   If not meet the specified value, turn RV202 and repeat steps 1) to 2).


TV screen
Normal tracking

Pushing ▲ button makes right moving,
▼ button makes left moving.

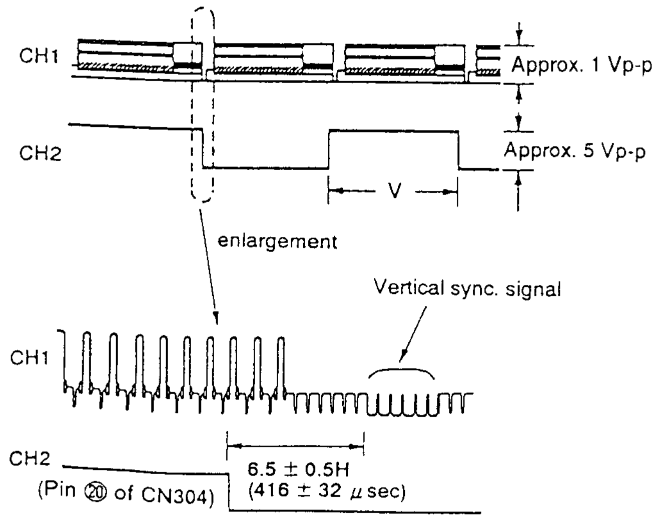

CH1
Approx. 1 Vp-p
CH2
Approx. 5 Vp-p
V
enlargement
Vertical sync. signal
CH1
CH2
(Pin ⑳ of CN304)
6.5 ± 0.5H
(416 ± 32 μsec)

Fig. 7-2-5.

2-3-2. Sync. AGC Adjustment (RV-34 Board)

Mode	E-E
Signal	Color bar
Measurement Point	CJ601 VIDEO LINE OUT (IO-51 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001
Specified Value	1.00 ± 0.05 Vp-p

Note: VIDEO LINE OUT terminal must be terminates at 75Ω.

Adjusting Method:

1) With RV001, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

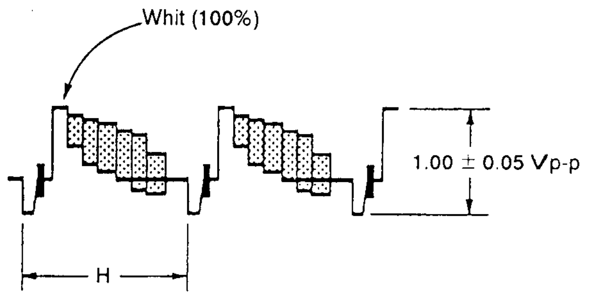

Whit (100%)
1.00 ± 0.05 Vp-p
H

Fig. 7-2-6

2-3-3. White Clip Adjustment (RV-34 Board)

Purpose:

Adjust the frequency of FM modulated YFM signal doesn't go too high.

When it is out of order, white goes flat and black is over-modulated.

Signal	Color bar
Measurement Point	Pin ㊺ of IC001
Measuring Instrument	Oscilloscope
Adjusting Element	RV004
Specified Value	White clip : 180 ± 5% Dark clip : 50 ± 10%

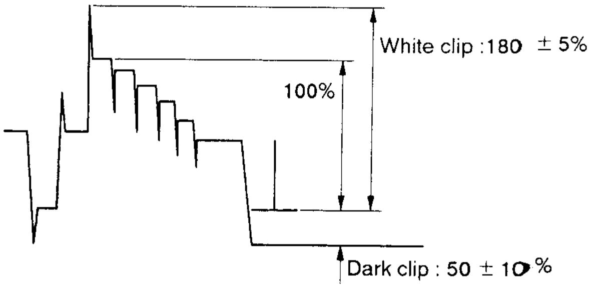

White clip :180 ± 5%
100%
Dark clip : 50 ± 10%

Fig. 7-2-7.

2-3-4. Recording Chroma Adjustment (RV-34 Board)

Purpose:

Adjust recording chroma level.
When it is out of order, S/N ratio of color goes bad, the picture is not colored and second sequence beat appears.

Mode	E-E
Signal	Color bar
Measurement Point	Q013 Emitter
Measuring Instrument	Oscilloscope
Adjusting Element	RV009
Specified Value	130 ± 10 mVp-p

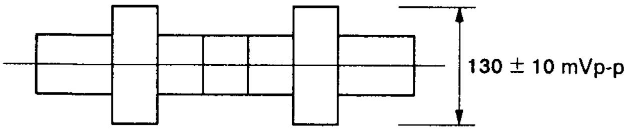


Fig.7-2-8

Reference:

Adjusting level is low; Bad color S/N ratio, not colored.
Adjusting level is high; Second sequence beat (squared noise) appears.

2-3-5. Playback Level Adjustment (RV-34 Board)

Purpose:

Adjust playback video signal level to the specification.
When it is out of order, the picture is darkened or brightened on TV screen. White goes flat.

Mode	Playback
Signal	Color bar or alignment tape
Measurement Point	VIDEO LINE OUT
Measuring Instrument	Oscilloscope
Adjusting Element	RV003
Specified Value	1.0 ± 0.02 Vp-p

Note : Video Output terminal must be terminated at 75Ω.

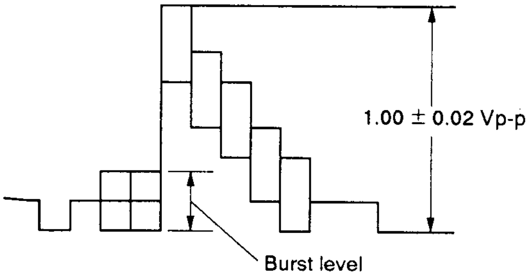


Fig.7-2-9

Reference:

Adjusting level is low; The picture is darkened on TV screen.
Adjusting level is high; The picture is brightened on TV screen. White goes flat.

2-3-6. Carrier Deviation Adjustment (RV-34 Board)

Purpose:

Adjust FM modulating frequency for signal.
When it is out of order, black and white are over-modulated, interchangeability is lack, the screen is darkened or brightened or off.
This adjustment should be done after checking 2-3-5. Playback Level Adjustment is satisfied.

Carrier Set	
Mode	E-E
Signal	None
Measurement Point	Emitter of Q034
Measuring Instrument	Frequency Counter
Adjusting Element	RV006
Specifed Value	3.80 ± 0.05 MHz
Deviation	
Mode	REC. PB
Signal	Color bar
Measurement Point	VIDEO LINE OUT
Measuring Instrument	Oscillosope
Adjusting Element	RV005
Specifed Value	1.00 ± 0.02Vp-p

Note : Video Output terminal must be terminated at 75Ω.

Adjusting Method:

1) Set to E-E mode in the no signal condition.
2) Connect frequency counter to emitter of Q034, and adjust with RV006 so that the reading on frequwncy counter goes 3.80 ± 0.05 MHz.
3) Feed the color bar signal and record it.
4) Playback the recorded signal and sheck the signal at VIDEO LINE OUT goes 1.00 ± 0.02 Vp-p with oscilloscope.
5) When it is out of order, adjustment it with RV005.
6) Repeat items 4) and 5) fill the specification is satisfied.

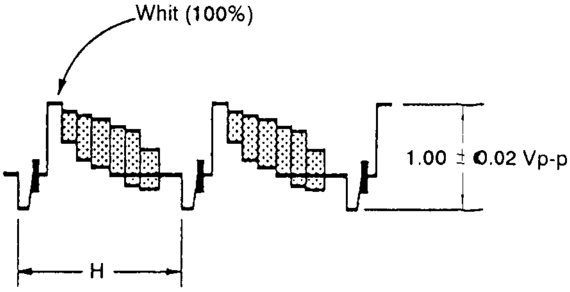


Fig.7-2-10

2-3-7. VCO Adjustment (RV-34 Board)

Purpose:

Adjust to lock the color surely.
When it is out of order, the picture doesn't colored.

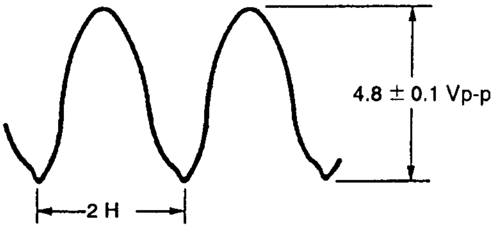
Mode	PB
Signal	Color bar
Measurement Point	Pin (55) of IC001
Measuring Instrument	Digital voltmeter
Adjusting Element	T001
Specified Value	2.5 ± 0.1 Vdc

2-3-8. SECAM Discrimination Adjustment (RV-34 Board)

Mode	E-E
Signal	SECAM Color bar
Measurement Point	Pin ⑪ of IC201
Measuring Instrument	oscilloscope
Adjusting Element	RV201
Specified Value	4.8 ± 0.1 Vp-p

Adjusting Method:

1) Adjust RV201 so that the amplitude of 1/2 fh waveform becames 4.8 ± 0.1 Vp-p.



2-3-9. CCD Video Level Adjustment (SK-44 Board)

Mode	E-E
Signal	NTSC Color bar
Measurement Point	Pin ② of IC301
Measuring Instrument	Oscilloscope
Adjusting Element	RV301
Specified Value	2.00 ± 0.05 Vp-p

Adjusting Method:

1) With RV301, adjust the video signal level to 2.00± 0.05 Vp-p.

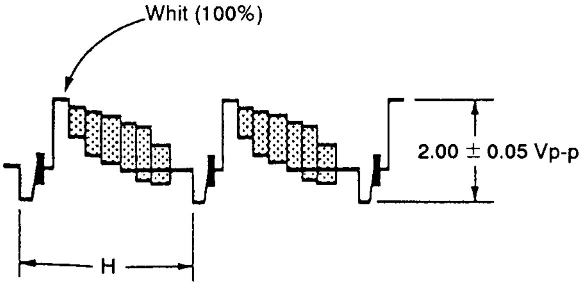

Whit (100%)
2.00 ± 0.05 Vp-p
H

Fig. 7-2-12.

2-4. AUDIO SYSTEM ADJUSTMENTS

- Adjust both Lch and Rch.

[Connection]

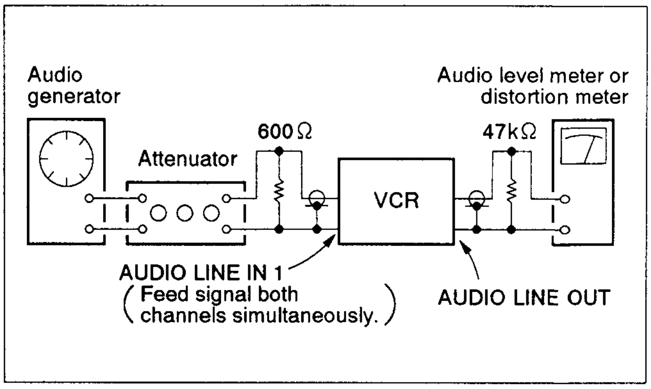

Audio generator
Audio level meter or distortion meter
600Ω
47kΩ
Attenuator
VCR
AUDIO LINE IN 1
(Feed signal both channels simultaneously.)
AUDIO LINE OUT

Fig. 7-2-13.

2-4-1. Hi-Fi Audio System Adjustment

- Set switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch ·········· LINE 1
  AUDIO MONITOR ················ STEREO

[Adjusting Sequence]

1. VCO fo adjustment
2. BPF fo adjustment
3. AF switching position

1. VCO f0 Adjustment (HF-34 Board)

Purpose:

Adjust to have interchangeability in HiFi audio.
When it is out of order, the sound is distorted.

[NTSC mode]

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.3 MHz Adjustment	
Measurement Point	Pin ⑲ of IC101
Adjusting Element	RV103 (R CH)
Specified Value	1.3 MHz ± 1 kHz
1.7 MHz Adjustment	
Measurement Point	Pin ㉚ of IC101
Adjusting Element	RV102 (R CH)
Specified Value	1.7 MHz ± 1 kHz

[PAL mode]

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.4 MHz Adjustment	
Measurement Point	Pin ⑲ of IC101
Adjusting Element	RV105 (R CH)
Specified Value	1.4 MHz ± 1 kHz
1.8 MHz Adjustment	
Measurement Point	Pin ㉚ of IC101
Adjusting Element	RV104 (R CH)
Specified Value	1.8 MHz ± 1 kHz

Note: Connect the frequency counter through a probe of high input impedance (more than 1 MΩ) and low capacity (10 pF or less).

Adjusting Method:

1) Connect the frequency counter to each measurement point.
2) Adjust each volume so that each frequency meets its specified value.

2. BPF f0 Adjustment (HF-34 Board)

Purpose:

Adjust to separate carrier component precisely and to operate normally the filter for cutting video signal.
When it is out of order, the sound is distorted.

Mode	PB
Signal	1.608 MHz Input 200 mVp-p : Pin ① of CN103
Measurement Point	Pin ⑲ of IC101 Pin ㉚ of IC101
Measuring Instrument	Oscilloscope
Adjusting Element	RV101

Connection:

1) Remove HF-34 board from CN103, and feed 1.608 MHz, 200 mVp-p sine wave to Pin ① of CN103.

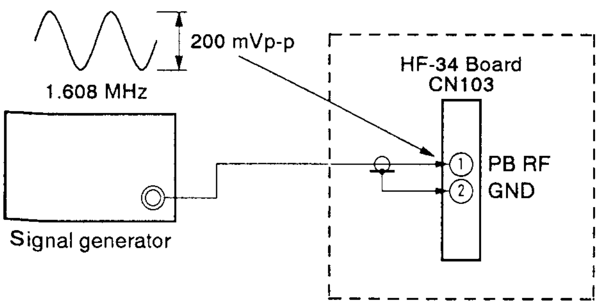


Fig. 7-2-14.

Adjusting method:

1) Turn RV101 counterclockwise seen from the component side.
2) Turn RV101 clockwise gradually and stop turning when the level Ⓐ becomes equal to the level Ⓑ.

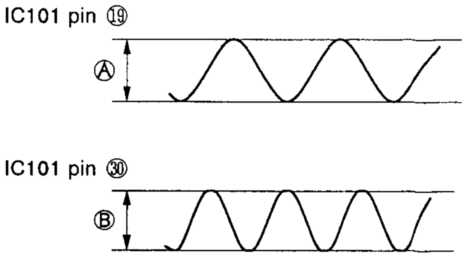


Fig. 7-2-15.

3. AF Switching Position Adjustment (MA-202 Board)

Adjust the interval between A CH and B CH of tape playback output. Improve the interchangeability with other tapes and sets. When it is out of order, noisy sound is increased and big noise is heard.

Mode	PB
Signal	Alignment tape
Measurement Point	CH1: See Fig. 7-2-16 (HF-34 Board) CH2: Pin ③ of CN802 (RV-34 Board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201
Specified Value	Fig. 7-2-17

Measure between the big land and the small land near the both sides of CN103 on the component side of HF-34 board.

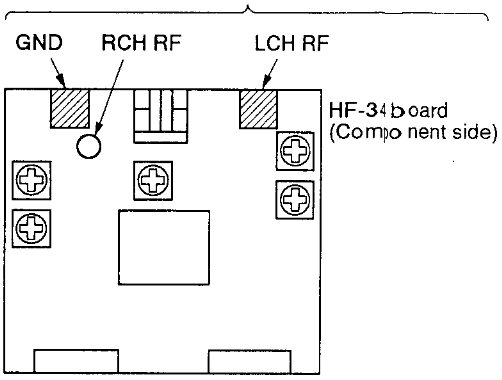


Fig. 7-2-16.

Adjusting method:

1) Adjust the tracking position to the center by pushing tracking buttons ▲, ▼ (on remote commander). (Auto tracking: OFF)
2) Adjust RV201 to minimize dropout.

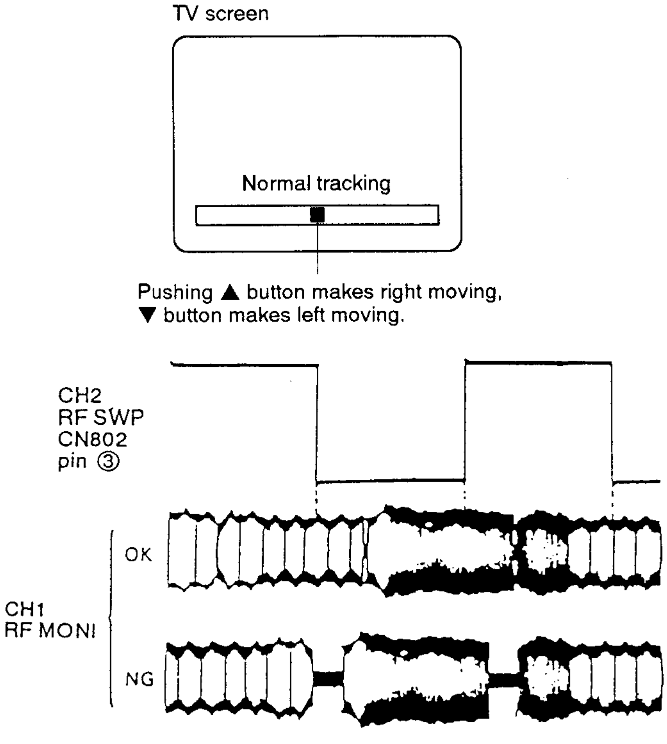

TV screen
Normal tracking
Pushing ▲ button makes right moving,
▼ button makes left moving.
CH2
RF SWP
CN802
pin ③
OK
NG
CH1
RF MONI

Fig. 7-2-17.

2-4-2. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Set AUDIO MONITOR to normal.

1. ACE Head Adjustment

Refer to the service manual of VHS MECHANICAL ADJUSTMENT Ⅱ.

2. Recording Bias Adjustment (MA-202 Board)

Mode	REC and PB
Signal	400 Hz, − 30 dBs 7 kHz, − 60 dBs
Measurement Point	AUDIO LINE OUT L or R
Measuring Instrument	Audio level meter
Adjusting Element	RV851
Specified Value	0 ± 1 dB

Adjusting Method :

1) Supply a signal of 400Hz, − 30 dBs to Audio Line Input.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio level meter will indicate − 30 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded portion, and mesure output levels at 400 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output levels within a range of the 400 Hz playback output level 0 ± 1 dB. When beyond this range, sdjust RV851 and repeat the steps 1) through 7) above.

2-5. TUNER SYSTEM ADJUSTMENT

2-5-1. Receive Separation Adjustment (TU-150 Board) (SLV-836EE/K881/X831)

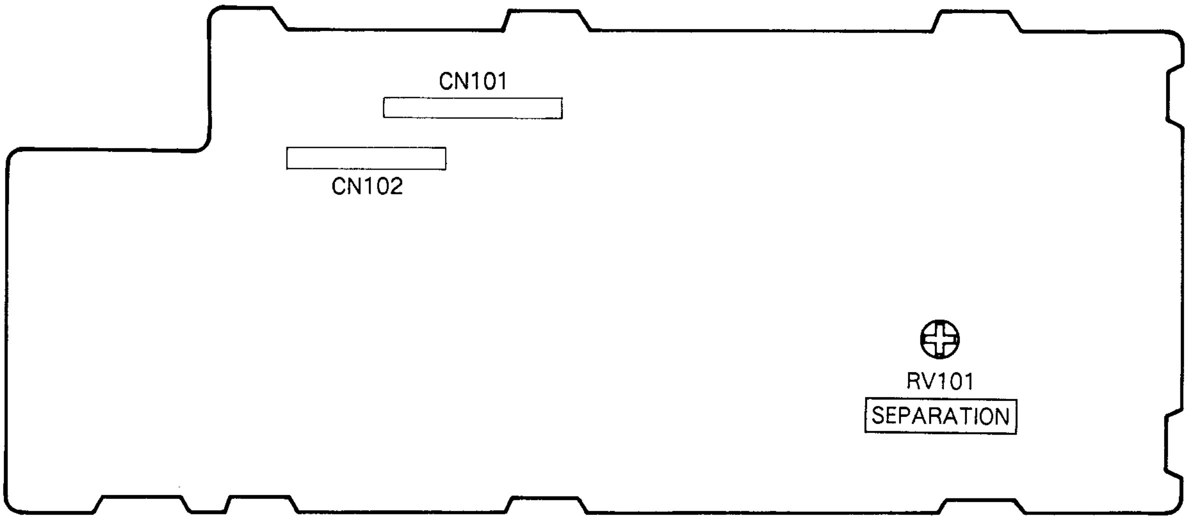
Signal	Stereo Lch: No modulation Rch: 1 kHz Modulation: 100%
Connection Point	AUDIO LINE OUT L
Measuring Instrument	Oscilloscope
Adjusting Element	RV101

Adjusting method:

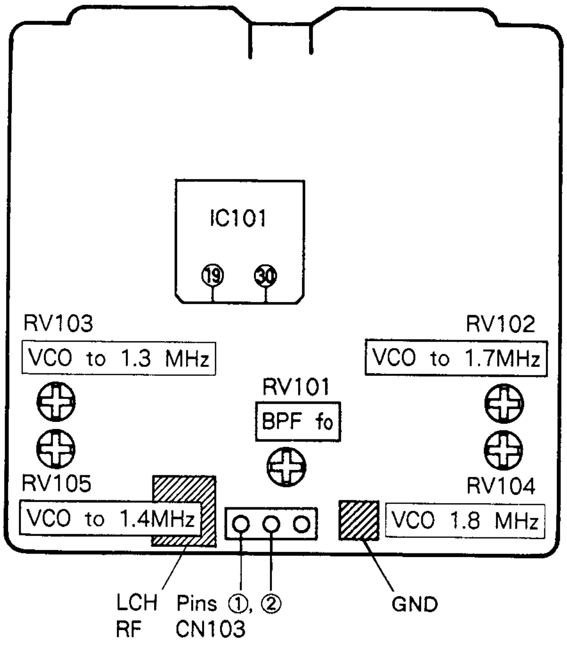
1) Set the sound multiplex signal generator in the Stereo mode, and set Lch to 400 Hz and Rch to 1 kHz, 100% modulation.
2) Connect the oscilloscope to the Lch of Audio Line Output.
3) Adjust RV101 to minimize Rch (1 kHz) output.
   When this is done, do not fully turn RV101.
   (The "STEREO" indication must be illuminated.)

2-6. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

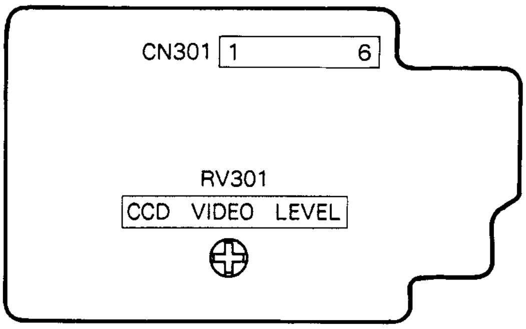
TU-150 BOARD (CONDUCTOR SIDE)


CN101
CN102
RV101
SEPARATION

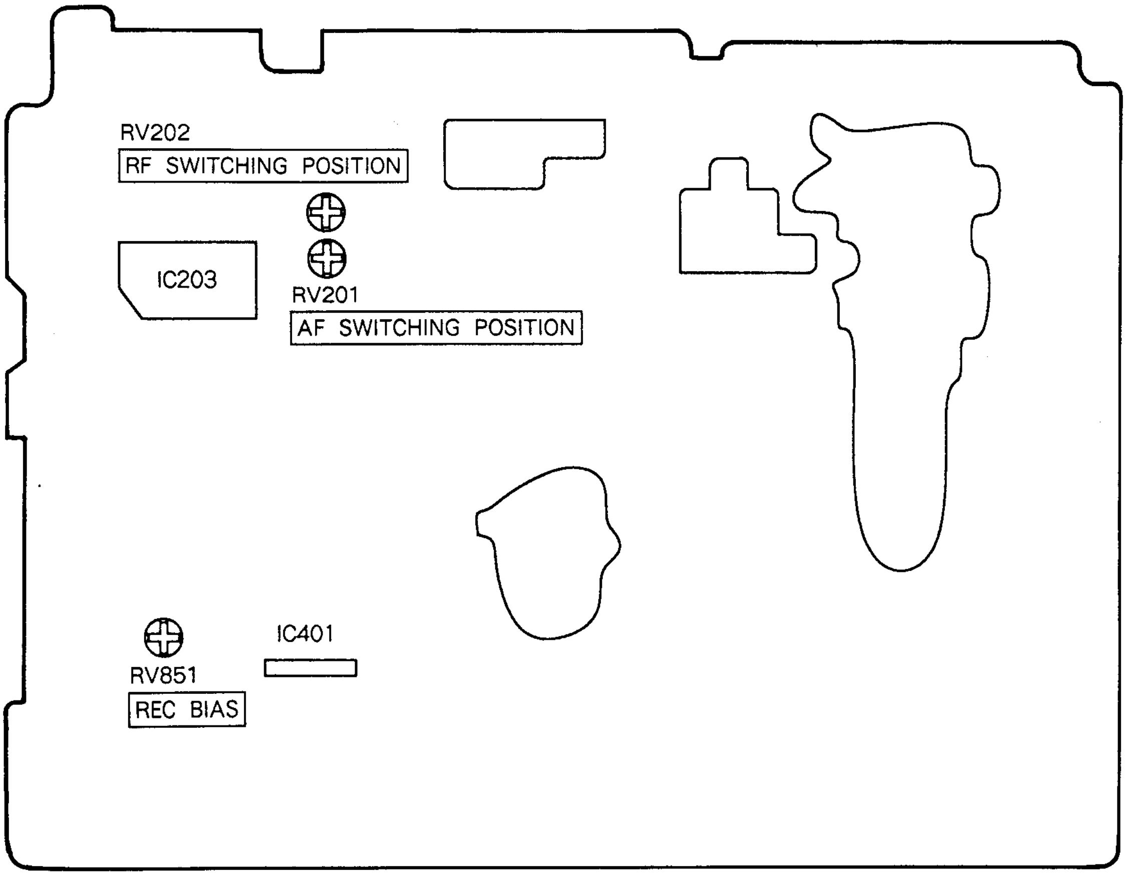
HF-34 BOARD (COMPONENT SIDE)


IC101
⑲
㉚
RV103
VCO to 1.3 MHz
RV102
VCO to 1.7MHz
RV101
BPF fo
RV105
VCO to 1.4MHz
RV104
VCO 1.8 MHz
LCH
RF
Pins ①, ②
CN103
GND

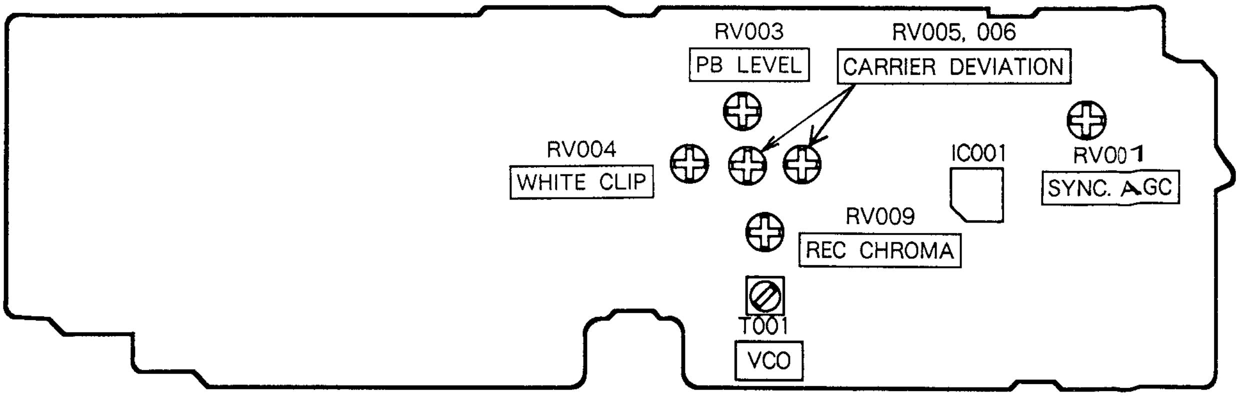
SK-44 BOARD (COMPONENT SIDE)


CN301
1
6
RV301
CCD VIDEO LEVEL

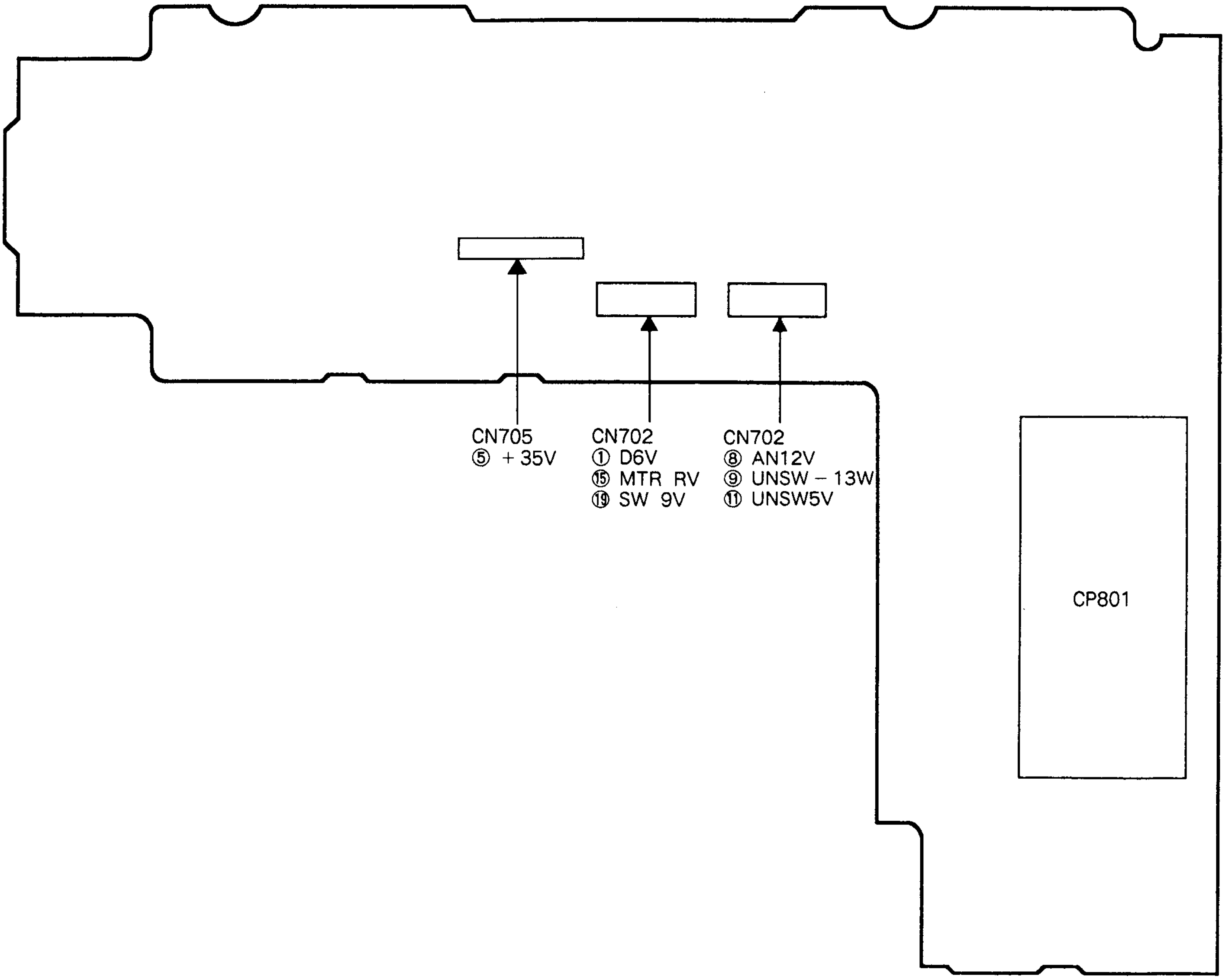
MA-202 BOARD (CONDUCTOR SIDE)


RV202
RF SWITCHING POSITION
IC203
RV201
AF SWITCHING POSITION
IC401
RV851
REC BIAS

RV-34 BOARD (COMPONENT SIDE)


RV003
PB LEVEL
RV005, 006
CARRIER DEVIATION
RV004
WHITE CLIP
IC001
RV001
SYNC. AGC
RV009
REC CHROMA
T001
VCO

PT-97 BOARD (CONDUCTOR SIDE)


CN705
⑤ +35V
CN702
① D6V
⑮ MTR RV
⑲ SW 9V
CN702
⑧ AN12V
⑨ UNSW – 13W
⑪ UNSW5V
CP801